

CITY GOVERNMENT.

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THE TRAMP PROBLEM IN CITIES.

An inquiry from Hon. Peter J. Carolus, judge of the police court of St. Joseph, Mo., to the League of American Municipalities, in regard to the tramp problem, has brought forth the following information and suggestions:

William C. Maybury, Mayor, Detroit, Mich.—The common council of the city of Detroit adopted, some years ago, an ordinance making certain offenses misdemeanors, and all vagrants, idlers and people without visible means of support are prosecuted before a police justice. All convictions under the above offenses are punished by fine, or in default thereof imprisonment in the Detroit House of Correction, an institution which is conducted by the municipality, and at which place all prisoners are obliged to perform hard labor. During the fiscal year ending July 1, 1897, there were but 173 commitments for vagrancy. However, a large class of these prisoners come under the head of disorderlies, vagrancy under the city ordinance being disorderly conduct. I think you will perceive by these figures that Detroit, which is a city of 373,000 inhabitants, has already solved the tramp question. This city, being on the frontier, provided with perhaps the largest police department in the United States, in proportion to its size, is no place for such people. The fact that strict surveillance is necessary for the preservation of law and order here has made this city an uncomfortable place for crooks, idlers, and people without occupation. When once sentenced to the Detroit House of Correction they are enforced to labor of no light character.

Arthur C. Hastings, Mayor, Niagara Falls, N. Y.—The tramp problem here is settled by bringing them up before the police justice, who sends them down to the county jail at Lockport, about twenty miles from here, where they are utilized in breaking stone, and this has been very effective in having them keep clear of this vicinity.

Robert J. Saltsman, Mayor, Erie, Pa.—Every city should have a work-house or stone pile for tramps or vagrants; we have nothing of the sort, but work our tramps in summer cleaning the streets. If we could get our county commissioners to join us we would build a work-house at once.

F. G. Pierce, Mayor, Marshalltown, Ia.—We consider the tramp a good thing, so "push it along." We give any person who applies to any of the police officers one night's lodging in the station house, and if the tramp is found in the city the next night he is run in and given five days on bread and water. In the summer time we work the tramps on a small city park under way to completion. We find, however, that there is only one way to deal with this question, and it is a very good solution to the question, and that is the bread and water diet. Just as long as cities give tramps a good lodging and good meals they will be troubled, and just as soon as they begin to give them the bread and water diet they will give that city a wide berth, I assure you.

Jerome De Witt, Mayor, Binghamton, N. Y.—We have no special act in regard to "tramps." I have conferred with ex-Recorder Roberts of this city, who lately went out of office. He tells me that when he took the

office, three years ago, it was no unusual thing to have twenty or twenty-five tramps arraigned in his court each morning. Indeed, they would go to the police office and request shelter and sustenance in the jail. It had been the practice here to discharge them on the arraignment, and direct them to leave the city. Recorder Roberts thought they did not regard their treatment as punishment, and set to work to examine them carefully on their oaths, as to where they had been, where they were going, whether they had any business, where they had been in the habit of sleeping and getting their meals, etc., etc. They would very often, by their admissions, convict themselves. It was his practice then, to take two or three of the worst cases and sentence them to the penitentiary, at hard labor, for a term not exceeding six months, generally for the full length of the term, under the act of 1885, chapter 490, as amended by the act of 1891, chapter 115. He said that practice had not been pursued any great length of time before the tramps commenced to skip the town, and after he had administered the tramp law in this way for a month or two, he would seldom have more than ten or a dozen tramps per month. He rid the city of this nuisance almost entirely. He says he used to hear from the cities and towns around us, and he thinks they are not particularly benefited by the rigid enforcement of the law in this city.

M. M. Stephens, Mayor, East St. Louis, Ill.—We have quite a number of tramps and vagrants to deal with, more particularly tramps. The way we dispose of them is by rounding them up, keeping them over night, and giving them hours to leave town, or escorting them across the bridge into our neighboring city. Sometimes we are obliged, in case of vagrants, to send them to the rock pile, which is controlled by the county authorities. Have often thought that one of the best ways to a solution of the problem would be for a city to purchase or lease a rock quarry and force tramps to work therein while staying in the vicinity. But we have nothing of that kind, consequently have to dispose of them in the way that I have stated.

E. F. Tyler, Mayor, Ironton, O.—We have no way of disposing of tramps whatever, and have been trying to get our council to pass an ordinance empowering me to work them on the streets or upon a stone pile, that is, to break limestone to place on streets, but so far have failed, but last night at our meeting of council I succeeded in getting an ordinance through that tends in that direction. The only thing I can do now is to read to them some imaginary law and scare them out of town.

Bernard Keating, Auditor, Bridgeport, Conn.—Relative to the tramp problem, I would state that our city board of charities provides a lodging house for vagrants, where they can stay for one night only, and then they must pass on, as no vagrant is cared for more than one night, unless sick or disabled. Habitual vagrants, who beg on the streets, or from house to house, are arrested and sent to jail. Personally, I believe that the best solution of the problem is to provide a work-house and compel each vagrant to earn his lodging and meal.

W. G. Mellinger, Mayor, Cumberland, Md.—In regard to our experience with open air tourists or sons of rest, I will state that when my term of office began, nearly



two years ago, I found the city swarming with tramps. I commenced an investigation as to the cause of their plentifullness, and found that the previous administration had given them shelter at the police station, as many as forty stopping there in one night. I issued an order to the chief of police not to allow tramps to lodge in the station house without an order from the mayor. For a while I was put to considerable trouble from the fraternity requesting permission to lodge in the station house at night. I cross-examined them closely and sifted the deserving from the "hobo," and allowed them shelter. I told the "hoboes," if they wanted to lead a life of wandering from town to town, that we would not shelter them unless the weather was extremely cold. I also had some of the vicious put to work with ball and chain at such improvements as the city did not have the money to expend for, and at such work as was out of the way of the people. This called forth some criticism from sentimental people, but the general public commended it. Another class I cut short was the apparently crippled class who burn their arms with acids to work on the credulous public; these I forbid soliciting, and some of the vicious were arrested and sent to the House of Correction, and the consequence is that we do not have one-fourth of these gentlemen of leisure that we had two years ago. There is too much sentiment in dealing with these gentry; nine out of ten are single men with no one to support but themselves; yet many industrious working men with large families will find their wives pitying and feeding these worthless, lazy fellows, while their husbands toil like slaves to support family and tramps. A single man who cannot get work enough to support himself is worthless and should be compelled to work if he does not do so from choice. I do not believe in any system that will tax labor to support idleness, and no scheme to rob one man who is industrious and frugal to give another who is dissolute and vicious. I find people without work lazy as a general thing, and laziness, with savage cunning, makes the fight more desperate each year—an army of non-producers, like locusts, eating up the substance of the industrious to obtain the best possible sustenance without labor.

W. L. Hathaway, Mayor's Secretary, New Bedford, Mass.—Our city is troubled so little with tramps that it is a matter of trivial importance. What few tramps we have are lodged at the station house of the police department over night, and are then put on their way. Any further particulars on this subject, we think would be cheerfully rendered by the police department.

T. T. Duffy, Mayor, Dubuque, Ia.—We have a vagrant and state law for tramps, prostitutes, keepers of bawdy houses, habitual drunkards, gamblers and other disorderly persons. Beggars fraudulently collecting alms or money for charitable institutions, persons wandering from place to place, having no visible calling or means of support, are declared to be vagrants. On complaint being laid before any justice of the peace, of whom we have three in this city, such accused persons may be apprehended and required to give bonds for good behavior for the period of one year, in default of which they must be committed to the county jail. We have no municipal court and all of our criminal business less than indictable affairs are summarily disposed of in justice court, with right of appeal by defendant. We avoid prosecutions under the vagrant act, because most of the accused can be prosecuted under other statute provisions more effective and less difficult to handle. Such vagrants as are found wandering around from place to place without any visible calling or means of support, come within the provisions of the tramp law, which includes in its definitions all male persons over sixteen years of age who are found wandering about from place to place, having no visible

calling, being physically able to work and unable to show reasonable efforts in good faith to secure employment. On conviction these persons are sent to jail not to exceed ten days at hard labor, or solitary confinement not to exceed five days. Common beggars are considered tramps. Of them we have quite a number, but far less than under the old vagrant act, which had no solitary confinement penalty, which all genuine tramps do not take to kindly. We have not made much of a success of the hard labor feature in the penalty, for the reason that the offense being under the statute the commitment is to the county jail, and the county board seems to think that the cost of keeping the tramps at work more than offsets the value of the work done by them. Some years ago they were compelled to work on roads leading into the city; when the work was done beyond three miles distance the cost exceeded the gains, and that way of handling the condemned was abandoned. There is some talk now of putting them to work breaking rock for use on roads near the city, but I do not think there will be much of that done. We cannot utilize that kind of labor on the streets of the city, because of the great number of laboring men who expect work from the city, and whose families would suffer if they did not get it. Public sentiment would not favor working a tramp in competition with the poor street laborer. We have not so many of these cases to handle as previous to the enactment of the present tramp law. The tramp dreads the thought of hard labor and solitary confinement. Under the vagrant law each vagrant might be tried separately, making quite a fee bill for justice and constable and other officers, thus offering inducements for officers to hunt up business and often arrest and try men who were perhaps technically vagrants. The abuse of the opportunities thus offered became so great throughout the state, and the cost to counties so burdensome, that the tramp law provides that when several tramps are arrested together, they shall be tried jointly on one information, making one case instead of many. The justice fee must not exceed \$2, whether one or a dozen be tried, and the other officers' fees cannot exceed in any case what they might be if only one were tried. That is one good feature of the tramp law, which is a good one provided proper care is exercised to distinguish the genuine tramp from the unfortunate wanderer who may be penniless, but honestly willing to labor if the labor can be had to do. It is a troublesome problem and very difficult to solve satisfactorily. To arrest the average tramp and commit him to jail in the winter season, where he has a comfortable stopping place, snug and warm, provided with three better meals daily than he hopes to get outside, has no terror for him; he rather likes it and courts it if he is not required to labor. Tramping will never be eliminated or diminished to any great extent in that way. I should say that they should be required to labor when practical on streets or roads; when not practical it seems to me that they should be required to work anyhow—profit is no profit to the county or city that deals with them and feeds them. If nothing better can be done, I should favor having piles of rock or other material in a suitable yard connected with the jail, and require the tramp to carry a certain quantity from one side of the jail to the other every day, and make his rations, kind and quantity, contingent on the faithfulness of his work. Honest men must work some in cold weather—the tramp should be no exception. If he refuses to work, then let him have solitary confinement, with his provisions properly regulated. I am inclined to think no community would be troubled with a second visit from a tramp who had some experience like this.

J. A. Johnson, Mayor, Fargo, N. D.—In regard to our manner of handling tramps and vagrants, beg to say that we probably have as many of that undesirable element as

any city of its size in the United States. They begin to come about a month before our harvest and stay until the inclemency of the weather drives them south. Our method consists in keeping them on the move. We extend our patrol limits during the visitation of this gentry. Those we cannot compel to move on, we arrest and set to work on the streets, under the supervision of officers. One or two doses is usually sufficient, their successors seeming to find out what is expected of them. In answer to your question as to the solution of the tramp problem, I beg to say that it is very hard to even try to reply to. In my judgment plenty of work at a fair compensation would be the best solution; those who would not work at fair pay should be arrested and put to work on the streets with a ball and chain on a diet of bread.

S. M. Jones, Mayor, Toledo, O.—I have especial pleasure in calling your attention to the very satisfactory working of what was considered by some people a doubtful experiment; reference is had to the present method of caring for transient men who are found in Toledo in search of employment and who are out of money. Heretofore all such men have been treated in a way that implied, at least, that to be in search of work and out of money was a crime. Lodging was provided for them at the East Side sub-station, on the bare floor; in the morning they were given some bread, bologna and coffee, after which they were marched to the city limits in charge of an officer, who dismissed them with the command to "move on." Under the present arrangement all persons without money who apply for food or lodging are directed to the lodging house of the Toledo Humane Society, where they are provided with a bath, a good bed and wholesome food. For each meal they are required to work one hour on the city streets, under the direction of the street commissioner. It gives me a special pleasure to say that thus far the number of men who have sought to evade or avoid payment for their entertainment in the manner provided is so insignificant as to be unworthy of mention, and alarmists who feared the town would be flooded with men eager to find an opportunity to work for food and lodging may find comfort in the December report, which shows a net decline of more than four hundred in the number of persons entertained during the month, when compared with December, 1896. This embraces, also, the late comers who were lodged at the police stations. I am sure all good citizens will feel a just pride that our city has taken this progressive step in dealing with unfortunate men, and that the results are so gratifying, as results always are when men deal with men in a christian manner. The moral effect on the unfortunate men themselves goes a long ways toward restoring their manhood—in many cases well nigh crushed by the hopelessness of the despair into which they have fallen. If any part of the business of the city is making men, I am sure this department will return as large dividends as any, when the small investment is considered. It is considerations such as these that have led to the erection of the municipal lodging house now the especial pride of many foreign cities, as well as some of the more progressive cities of our own country. I trust the day is not far distant when one of our recognized man-making institutions will be Toledo's Municipal Lodging House. I guarantee that it will pay.

John Warner, Mayor, Peoria, Ill.—I will say, in short, when tramps come to our city we keep them over night in the station house, give them their breakfast, and the next morning order them to leave the city. If they do not comply with our wishes and we catch them a second time, we send them to the work-house for sixty or ninety days. We manufacture brooms at our work-house in the winter time; in the summer time we make brick. We have generally from fifty to one hundred of these kind of people

employed there all the time. This is the only way that we know how to handle them.

R. H. Dudley, Mayor, Nashville, Tenn.—In regard to tramps, our city has no legislation whatever on this unfortunate class. During the winter months from 300 to 500 per month are allowed to sleep at night at the police station. Some remain only one night, while others remain as long as two weeks. We simply provide them with a place to sleep.

MODERN SCHOOL BUILDINGS IN NEW YORK.

C. B. J. Snyder, superintendent of school buildings for New York city, has aptly epitomized some of the defects too common in older school buildings, as follows: "Dark, unwholesome, low-ceiled playrooms; lack of opportunity to obtain fresh water for drinking purposes; inadequate and inferior sanitary accommodations; lack of out-door playgrounds; small dark classrooms, overheated and unventilated, and with two or three children seated at one long desk; wardrobes in the classrooms; lack of room for physical and manual training, etc." We are inclined to think that the day when such defects will longer be countenanced by intelligent communities is fast passing away. In fact, most of the new school buildings being erected in New York city (and at the present time thirty-three sites for elementary schools, and four sites for high schools are being acquired, together with twenty-six enlargements of old sites), are fireproof throughout, of steel skeleton construction with steel beams and brick arches for the foundation of the floor system, terra cotta partitions, iron and stone stairs, and an abundance of light and air. The indoor playrooms are large, and placed above the level of the street. Their ceilings are high and their floors are paved with rock asphalt. There are liberal drinking facilities, and the waste water is carried away in troughs, so designed as to prevent spattering and wetting the children.

The sanitary accommodations are adequate and standard. The closets are lined with glazed brick, the floors are of asphalt and skylights prevent dark corners, insuring cleanliness.

The classrooms average about 625 square feet, and crosslights, which are so injurious to the eyes of a child, are avoided by the placing of one large opening, often 16 feet long by 10 feet in height. Forced ventilation is provided on the basis of thirty cubic feet of fresh air per capita per minute. Wardrobes are placed outside the classrooms, and steam pipes dry and warm the clothing.

A new departure is the addition of a roof playground on some of the buildings. This, being high, affords better light and air than either the indoor playground on the first floor or the outdoor playground at the rear of the building. Every precaution is taken to inclose the roof and protect the sides, so that there is no danger of accident, and sanitary accommodations are provided on the floor next the roof. The need for such roof playgrounds is not so apparent in smaller places where good healthful ground can easily be acquired at small cost, but in the crowded city their introduction is most advantageous.

It will be seen by this that New York city, at least, is fast eradicating the defects brought so forcibly to our notice. But what is perhaps most astonishing is the minimum of cost at which these modern and improved structures have been erected. The average cost, per square foot, for the non-fireproof four-story school buildings, as erected a few years ago, was about \$14.25. A five-story fireproof building containing all the improvements described has been erected on 108th and 109th streets, between Amsterdam avenue and the Boulevard, at a cost of but \$15.85 per square foot, or only \$1.60 per square foot more.

MUNICIPAL VS. PRIVATE WATER PLANTS.

A careful investigation has brought forth the following facts regarding municipal and private operation of water plants in small cities and towns:

Geneva, N. Y., with a population of 10,000 inhabitants, was for fifty years supplied with water by a private company. About two years ago the city purchased the plant for \$150,000, although it was estimated that a new and modern plant of equal capacity could have been constructed for \$125,000. Last year the rates to consumers were reduced 25 per cent., and still the income was sufficient to pay the interest on the bonds, the cost of extensions to the amount of \$4,500, and \$3,000 towards the sinking fund. The city now pays about half as much for fire protection and sewer flushing as it paid to the old private company.

Saugerties, N. Y., 5,000 population, found that the private company to whom a franchise was granted demanded as much for hydrants for fire protection as would pay two-thirds of the interest on the cost of the whole plant. The village, therefore, purchased the plant and is now operating it. The revenue from the water rents pays the principal as it becomes due, with interest, and the village has ample fire protection without cost, together with free water supply for all public purposes.

Ticonderoga, N. Y., granted a franchise to a private company about 1875, but the service was unsatisfactory, being based upon the principle of the greatest income to the company. About three years ago the town bought out the old company, since which time service has proved satisfactory, and rates have been reduced.

Canandaigua, N. Y., population 6,000, is in the unique situation of having two water works systems, one built in 1884 by a private company, and the other in 1895 by the village. This was brought about by the following circumstances, as stated by one of the village officials: In 1894 the village contract with the private water company expired. The board of trustees endeavored to renew the contract at the same rates the village had been paying, viz.: \$4,750 per annum for fire protection, street sprinkling, public watering troughs, sewer flushing, etc., but the company demanded an increase to the sum of \$6,000 per annum. A controversy resulted and the taxpayers finally voted in favor of the village owning and operating the system. The board of water commissioners, however, were unable to get a price from the company and were never furnished with the details of the existing plant as to distribution and sizes of mains, number and location of gate valves, hydrants, etc. The plant had originally cost about \$80,000, but had acquired a bonded indebtedness of \$166,000, bearing interest at 6 per cent. The company claimed a capital of \$200,000. Their revenue, according to the sworn statement of their superintendent, amounted to over \$15,000 annually. The company refused to dispose of their plant except under condemnation proceedings. This the village, which had granted the franchise free of charge, feared to enter into, least they should be required to pay a large sum for the franchise, and the appraisers take the gross receipts of the company (largely attributable to exorbitant rates charged) as a basis of valuation, and they would thus be obliged to pay more for the old system, which was very defective in many respects, than a new and more extended system would cost. The result was that the village built an independent plant at a cost of \$130,000, issuing twenty-year 4 per cent. bonds, which sold at a premium of \$4,000. The rates to consumers are now greatly reduced, being but \$3 per annum for kitchen, while the lowest charge by the old company was \$10 for such a service. The sworn statement of the private company gave their operating expenses at somewhat over \$10,000 per

annum and their interest charge in excess of this was over \$10,000, as there was other indebtedness bearing interest in excess of the \$166,000 issue of bonds. The interest charge on the new system is \$5,200, and the operating expenses are less than \$4,300. After operating twelve years the private company has 381 takers, while in two years the village has secured 620 takers, although the old system is still in operation. This is largely due to the low rates charged by the village and the superior quality of their water. The village now has 170 fire hydrants as against 85 of the old company. Moreover, the private company would lay its mains only on such streets as promised to give a remunerative return in rentals, thus depriving many people living on streets not thickly settled of any benefits from the water system. This is a common complaint against most water companies.

West Springfield, Mass., also had a serious experience relative to the purchase of its plant from a private corporation. A franchise was granted to a private company in 1875, and the works were established under an act of the legislature, which provided that the town might take the works at any time, and that if a satisfactory agreement could not be made with the company, a commission should be appointed by the supreme court, whose decision should be final. The plant cost the company about \$50,000; seventeen years later the town paid for it \$130,000, while for the last third of that time the company's receipts had been about \$7,000 per year. Thus the company received 10 per cent. on its investment during tenure, and two and a half times the principal at disposal. The village now has an annual income of \$13,000, with a growing population of between 6,000 and 7,000.

West Stoughton, Mass., had a somewhat similar experience. Here a private company started the works, laying about three miles of pipes and putting in a small pump in the basement of a factory. They then refused to extend the system further unless the town would agree to pay \$35 per year for fire hydrants, also for water in schools, and other town buildings. This would have cost the town from \$8,000 to \$10,000 a year, with a constant increase as the town enlarged. Since the charter of the company prohibited the town from starting its own works, it was voted to buy the part constructed and estimated to be worth, at the most, not over \$30,000. Bonds had been issued by the company to the amount of \$50,000, with interest unpaid. The court appointed three referees to determine the price the town should pay, and the works finally cost the town about \$70,000; the cost of maintenance, however, is not more than \$1,000 per annum, while the town has its fire and public service free.

Prior to 1893 the water supply of Webster, Mass., was controlled by a private individual. In that year the town constructed its own system at a cost of \$100,000. The supply is taken from a large well, and the water is pumped into a standpipe. The management is in the hands of three water commissioners and the system is declared by prominent citizens to be a most satisfactory and paying investment.

Warsaw, N. Y., passed through the experience of inadequate water supply and unsatisfactory service from a private company for a number of years prior to 1895. The company supplied only forty hydrants for fire protection and was invariably short of water during the season when it was most needed by the people. When the town could no longer endure such a situation the city issued \$75,000 worth of 4 per cent. bonds and a new system was built which had 140 double nozzle hydrants and about twenty miles of pipe. Two miles of 8 inch pipe were laid to lead the water to a reservoir holding 12,000,000 gallons, situated 320 feet above the village, and four miles of 10 inch pipe were laid from the reservoir to the town. This was not done, however, without a long legal

struggle with the previous water company, but the effort has repaid the town many times over. Under the new system the insurance rates have been reduced 25 per cent. This in itself is a considerable item to the property owner. The water rates were made 25 per cent. lower than were formerly charged by the company, and the net result was an income sufficient to pay the interest on the bonds and all running expenses. Hydrants, water for street sprinkling, drinking fountains, etc., are furnished free. The saving to the people on account of the reduction in insurance and water rates, is about \$6,000 annually. The old company is still in existence, and now charges \$1.50 less per faucet than the city works, but most of the people prefer to take their own city water, and the concensus of opinion in Warsaw seems to be strongly in favor of municipal ownership.

Warren, Pa., is now in the clutches of a private company. The complaint is loud that the service is very poor and the water unfit for use, but the people seem to be helpless on account of the laws of Pennsylvania, which provide that a city or town shall not put in its own works before endeavoring to buy out an existing plant, but which do not in any way regulate or limit what shall be paid or charged for the existing plant. Although corporations should be protected in their rights as much and as fairly as individuals, this law, at least, seems highly unjust, and is certainly proving a gag at the people's throat. Warren is a town of about 8,000 inhabitants, and the system cost the company in the neighborhood of \$60,000. At the time that the law compelling cities and towns to purchase existing plants was pending before the legislature, the company offered to sell the plant for \$110,000; they now ask \$150,000. This, it will be noted, is two and a half times the original cost, while in the meantime the company have had a most paying investment, so that they have already reaped a rich income on their capital. Under municipal ownership the people believe that they would have greatly reduced rates, better service, and a good income from their investment if there was any way of compelling the company to accept a reasonable price. This there does not seem to be and the people can only regret the loss of so valuable a franchise.

Almost a parallel case to this is found at Jermyn, Pa., where the people, almost with one voice, declare that they are "in the hands of a soulless corporation who are growing rich on the people while the people have no remedy." When the town of Jermyn was in its infancy, the people neglected their opportunity to establish municipal water works, and a corporation constructed the water plant, furnished good water and charged a good rate:—\$8.00 a year for each faucet. This the company did at an outlay of about \$15,000. Then the stock was watered until it could be watered no more; still the dividends amounted to 16 percent. per annum. This opened the way for another company. Then there was war. The price of water was reduced to \$6, then to \$5, and at last to \$4 per faucet. Meanwhile the population had increased, while the quantity of water had decreased and the quality had depreciated. Company No. 2 had muddy water, but no money; company No. 1 had money, but no water. They amalgamated, and the price was raised to \$8, as at first. At last the town was aroused and a vote was taken with 404 in favor of bonding the town and only 37 against it. Then legal difficulties began, and the city was beaten. The amalgamated capital of the two companies was estimated at \$180,000, and even for this amount they would not sell unless the people of Jermyn paid them a perpetual dividend on this amount of not less than 8 per cent. Experience such as this is perhaps a sad teacher, but it has been, beyond the peradventure of a doubt, a good and profitable investment for the water company, so there has been "no great loss without some gain"—in private pockets.

The system at Albion, N. Y., is owned by a private company and cost originally \$70,000. It is now valued at \$100,000. The village pays \$3,000 per year for fire protection alone, and most of the population take water, so that the income is a very good one on the investment. There are those prominent in the town who do not hesitate to say that the town has made a mistake in granting this valuable franchise to a company, as rates are gradually increasing and service is not improving.

Among places now contemplating the purchase or construction of municipal plants, is Haverstraw, N. Y. About eleven years ago water works were constructed by outside parties and a gravity system installed. During the first five years \$1,250 per year were paid for forty fire hydrants. This amount was then increased to \$2,500 per annum for sixty-two hydrants, the rates to private consumers being very high. The population of Haverstraw is about 5,000, while the collection of the company is, in round figures, \$11,000, and the original investment probably not more than \$74,000. The stock of the company, however, is watered to double this amount.

Twelve years ago a system was built by a private owner at Vineland, N. J., the income from which is now, on his own statement, \$10,500 per annum. The actual cost of duplicating the system would be more than \$50,000. The price demanded by the owner, however, is \$145,000, while the village contemplates purchasing the plant at something like \$127,000, believing that something should be allowed the owner on account of the earning capacity of the plant. Seventy-seven thousand dollars seems a large amount for a town of 5,000 people to pay for the mistakes of former office holders, but such is the repeated testimony of towns endeavoring to gain possession of franchises once granted to private individuals.

Kenosha, Wis., finds that although they paid an enormous sum to the private company for possession of the plant installed, still the receipts have justified the expenditure. During the second twelve months of city ownership and operation the receipts amounted to nearly \$12,000; the operating expenses to \$4,950; so that the city has a nice net income to pay toward the principal debt, at the same time getting its water for fires, flushing of sewers, schools, public buildings, etc., free, and reducing its rates 20 per cent. to private consumers. This would clearly go to show that the operation of a water system does not require such expert ability as to make it undesirable for a small city to own the plant, even at a large outlay and apparently small margin.

The city of Newton, Kansas, has tried both kinds of ownership, and the testimony is now greatly in favor of municipal ownership, the city authorities claiming that under such present ownership the city has a better supply of water, both in quantity and quality, at less cost than when a private corporation operated the business.

Cattaraugus, N. Y., not being able to buy out the existing private company, except at an exorbitant price, has instituted its own system at a cost of about \$22,000. The report is that the new system is working admirably, and that the majority of the people take the city supply and are well satisfied. About two years ago the city bought the old system at a tax and foreclosure sale for about \$400. The water is brought from a reservoir three miles distant from the village. At the present rate of income the system will pay for itself in twenty years.

Dover and Rochester, N. H., have each reported a large bonus paid to buy back the rights of private companies. In both instances the debt charge upon the city was very considerably larger than it would have been had these cities constructed their water works *de novo*.

Somersworth, N. H., was, however, more fortunate in its experience, having established a municipal system. This plant earned during its first year of operation enough to more than pay the cost of maintenance and interest on

the debt. In a community of only 7,500 people, with a valuation of only \$3,000,000 of property, this can be considered a very good investment, and a gratifying result. The total cost of the system, when completed, will be about \$175,000, including \$22,500 paid for the plant of the private company, according to the valuation of arbitrators, after the new system had been constructed.

The water works at Bridgeton, N. J., were built *de novo* by the city, and have been running just twenty years. The first cost for land, pumping station, reservoirs, and seven and a half miles of mains, was \$70,000. Thirty-three thousand dollars of this amount has been paid off, leaving \$47,000 to be paid on the principal sum. The works paid running expenses the first year, so that there has not been any extra tax on account of water works, and since that time the income has covered the cost of extensions, running expenses and the amount paid on the bonds; the works up to date having cost \$150,000, of which all is paid but the \$47,000 mentioned. The surplus last year, after all bills were paid, was \$12,000. Fire protection is furnished the city free, also water for public schools, sewer flushing, public buildings, etc.

From the facts presented thus far we shall draw no conclusions, for the reason that we do not believe any just conclusions can be drawn until a quantity of accurate and reliable data has been secured far in excess of anything thus far presented in the history of the discussion of municipal versus private ownership of public utilities. We shall continue our endeavor to obtain these facts as rapidly as possible and shall present them without prejudice to our readers, leaving them to draw their own conclusions and to form their own judgments from the preponderance of evidence.

PUBLIC UTILITIES AT VINELAND, N. J.

We have received a report upon the proposed municipal improvements at Vineland, N. J., which is of interest in many ways. It is chiefly of interest because the plan adopted by the council provides for the construction of a municipal water plant, electric light station, sewage pumping station, and garbage disposal plant in one building, all to be operated by one management. This is a novel, but at the same time a perfectly feasible plan for securing the public utilities at the least cost to the individual citizen. The question is, Why is it not more common?

The printed document contains the report of the committee and their recommendations, the report of the consulting engineer, Alexander Potter, of New York city, and the report of the solicitor, R. P. Fuller, setting forth the legal aspects of the case. The committee's report is chiefly of interest to our readers in that, in a perfectly impartial manner, it recognizes that the private company now operating its plant in the borough has some rights and that their plant is worth more to the borough than the bare cost of duplicating those portions of it which could be used in the proposed municipal plant. So many private companies have made such exorbitant demands when asked to sell, that we fear the sentiment against companies in such communities is spreading throughout the country, and we are apt to think that all companies are wholly bad, without any redeeming features. This is not so.

In the case of Vineland, the citizens some twelve years ago voted adversely to the proposition to install a municipal plant, whereupon Chas. Keighley, a local manufacturer, was given a franchise, the terms of purchase by the borough being "the cost thereof and 6 per cent. on the same from the average rate of the investment." At this present time this would amount to \$157,000, although those portions which could be utilized in

the new system are not worth \$50,000, the existing plant being so located that the pumping station, wells, and reservoir must be abandoned.

We quote: "Your committee hold that while there might be a question as to the legality of this contract, yet there undoubtedly are moral obligations existing between the borough and Mr. Keighley. The council unquestionably entered into this agreement in good faith, and we, after investigating the question in all its phases, and knowing that we can duplicate Mr. Keighley's plant for a less amount than he asks for it, are unanimously of the opinion that the borough should recognize the agreement entered into, especially as the sum now asked is not within \$30,000 of the amount which could be demanded under the contract. Honor should be placed above money consideration, and Mr. Keighley should be paid the price (\$127,000) asked in his letter."

The propriety of the committee's conclusion is apparent, when the fact is considered that with one-half the houses taking water, the income at present, over the operating expenses, is sufficient to pay the interest upon an investment of \$230,000. Yet we note from the local papers the expression of much dissatisfaction at "the committee's exorbitant recommendations." We are pleased to note this case of apparently fair and honorable recognition of the rights of a water company.

The saving effected by the combination of water, light, sewers and garbage disposal works is calculated by the engineer to be about 30 per cent. annually.

The garbage is to be disposed of, not by an independent crematory, but by auxiliary furnaces under the regular boilers, and arranged so that the gases from the garbage are entirely destroyed before reaching the stack. The plan also provides for the disposal of sewage upon the intermittent filtration plan.

The electric plant provides for three distinct systems of wiring: one for arc lamps, one for incandescent street lamps, and one for the house system, and the cost is estimated at \$21,100.

The solicitor's report is valuable in that it gives, in a concise form, the New Jersey law upon the rights and obligations of a borough in the construction of public improvements.

DETROIT'S FINANCIAL CONDITION.

Controller Beades has made the following statement of the financial condition of the city of Detroit at the close of business February 28, 1898:

| | |
|---|------------------|
| Assessed valuation | \$206,825,870.00 |
| Outstanding city bonds | \$4,830,000.00 |
| Sinking fund, cash | \$558,615.52 |
| Sinking fund, securities | 821,664.14 |
| Sinking fund total | 1,380,279.66 |
| Net general debt | \$3,449,720.34 |
| Special assessment street paving bonds | \$650,087.54 |
| Cash in fund for redemption of bonds | 322,898.07 |
| Net street paving bonded debt | 327,189.47 |
| Total net general and street paving debt | \$3,770,909.81 |
| Charter limit of bonded debt, 2 per cent. of assessed valuation | \$4,136,517.40 |

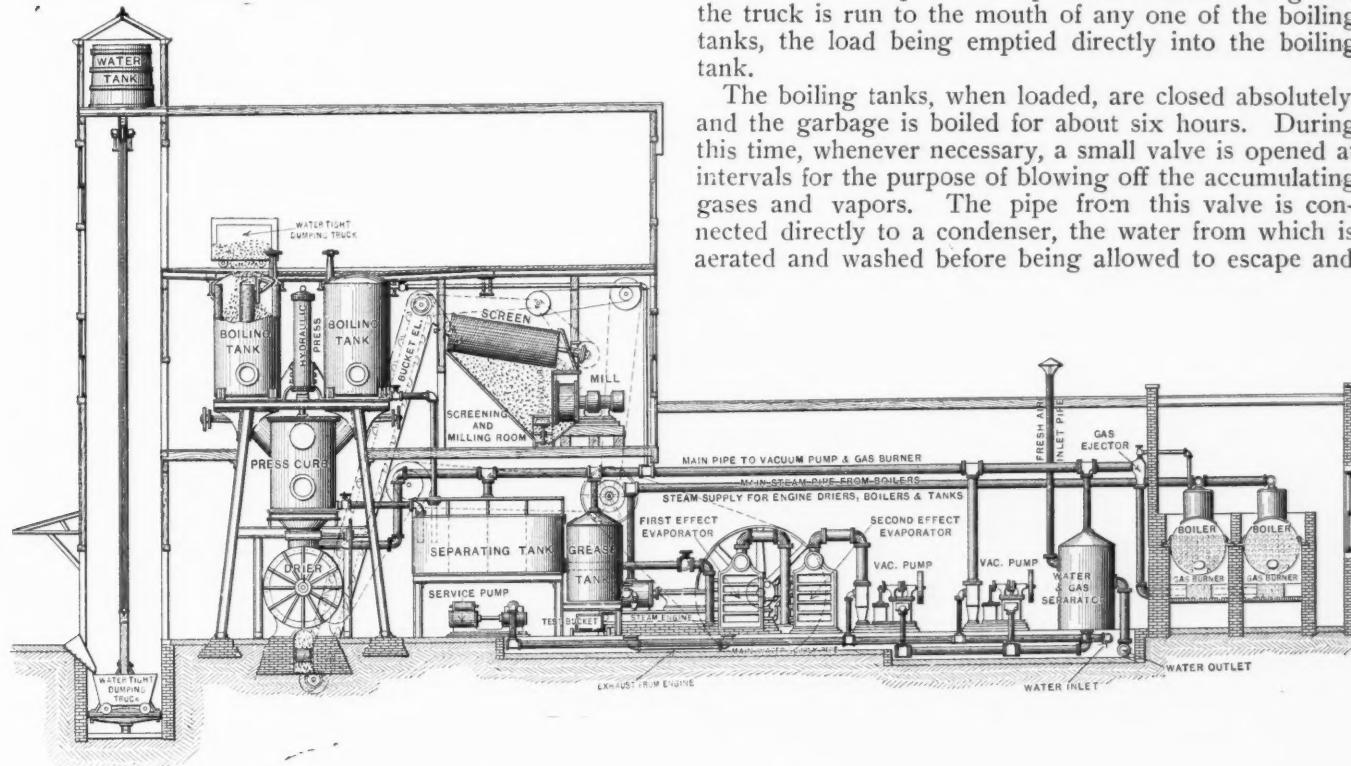
Waukesha, Wis., Jan. 27, 1898.
PUBLISHER OF CITY GOVERNMENT,
New York City.

Gentlemen:—First instalment of your CITY GOVERNMENT reached me this morning. Am highly pleased with it. I have already heard two of our alderman speak in high praise of it. Please accept my thanks for your kindness.

Yours truly,
W. H. GILMAN, Deputy City Clerk.

THE HOLTHAUS GARBAGE DISPOSAL SYSTEM.

No other branch of municipal work has been so problematical and bothersome as the disposal of garbage. While it is known that the garbage of our cities can be reduced to products of commercial value, there is a general disposition to allow it to go to waste rather than impair the public health by permitting the operation of unsanitary reduction plants. It has been frequently stated that garbage reduction is a failure both from a sanitary and a financial point of view. It is a fact that a number of reduction plants have been declared public nuisances and abated by the courts, or otherwise condemned, and on this account the utilization process has not been in good repute with the public. A comparatively new system, however, has come into the field and when it becomes better known the reduction or utilization process of garbage disposal will take high rank in the public estimation.



THE HOLTHAUS SYSTEM FOR GARBAGE REDUCTION AND UTILIZATION.

For some months CITY GOVERNMENT has been making a careful investigation of garbage disposal systems. It has already published the result of this investigation as regards the cremation plan, but has been unprepared until now to make a satisfactory report regarding the utilization process. After an impartially conducted examination of the plant at Bridgeport, Conn., and a thorough study of the plans for the plant now being erected at Syracuse, N. Y., it is found that there is at least one reduction or utilization process free from the objections generally raised against works of this kind. The Holthaus system owned by Mr. C. C. Currier, of Newark, N. J., is referred to. The plant at Bridgeport has been in operation since 1895, and no objection has ever been made to it by the neighboring residents. In fact, it has received the unqualified endorsement of the city, county and state boards of health. That the process is absolutely sanitary is proved by the actual experience with the works at Bridgeport. Health officials and mechanical and sanitary engineers from various parts of the country have personally inspected this Bridgeport plant and none have been able to point out any defects in it. The plant

now being erected at Syracuse, N. Y., contains a number of improvements, perfected since the erection of the works at Bridgeport, and, judging from the plans, it will be the model garbage disposal plant of the world.

By reference to the accompanying view a comprehensive idea of the operation of the Holthaus system may be obtained. It will, of course, be understood that the machinery can be located to suit space and other conditions that may exist in any particular case, and that the view here given is for the purpose of describing the operation of the plant only.

As, up to the present time, no uniform method has been adopted for collecting and carting garbage, different methods are used for getting it to the top or charging floor of the reduction building. The method here shown, however, has been found to meet most of the requirements and is sanitary in every respect. On the arrival at the plant of a truckload of garbage, it is emptied into a watertight receiving-tank truck on a platform lift. The lift is then run up to the top floor of the building and the truck is run to the mouth of any one of the boiling tanks, the load being emptied directly into the boiling tank.

The boiling tanks, when loaded, are closed absolutely, and the garbage is boiled for about six hours. During this time, whenever necessary, a small valve is opened at intervals for the purpose of blowing off the accumulating gases and vapors. The pipe from this valve is connected directly to a condenser, the water from which is aerated and washed before being allowed to escape and

the gases from which are run direct to the gas burners. It will thus be seen that this operation is entirely sealed and sanitary.

After the charge of garbage has been boiled the necessary length of time, steam is shut off and the mass allowed to settle. When this has been done, the patent draining apparatus (with which each tank is equipped) is opened, and the grease and water is run through closed pipe connections to sealed separating tanks. When the draining is finished, the large gate valves at the bottom of the tanks are opened, and the solid parts of the charge dropped direct into the press; the connection between tanks and press being absolutely tight, no odor of any kind is allowed to escape.

On the press being filled, the hydraulic ram is run down under any desired pressure, and all liquids that can be are pressed out and carried through closed pipe connections to the separating tanks before mentioned.

After pressing is completed, the entire bottom of the press curb is opened and the charge dropped directly into the drier, where by means of a most effective system of drying, the tankage from twelve tons of garbage can be

perfectly dried within two hours, and on a test has been done in one and one half hours.

When the charge is thoroughly dry, the outlets of the dryer are opened and by the operation of the dryer itself it is automatically emptied into conveyances which carry it either to screens, mills, storage, or shipping rooms. It will thus be seen that there is no handling whatever of the garbage after it is once put in the machine.

The operation thus far has left all water and grease in the separating tanks. These are large heated tanks, and are equipped with patent devices for skimming and cleaning. The grease is skimmed and run to the washing tanks, where, after a short stay and often being subjected to the washing operation, it can be barreled up or run to storage tanks.

The water left in the separating tanks, after the grease has been skimmed off, is run direct to the evaporators, where it is vaporized and made colorless and odorless before being allowed to escape.

All the boiling tanks, press curbs, separating tanks, grease washers, evaporators, and, in fact, all parts of the system, are connected to vacuum pumps and gas burners, the gas burner being located under the boilers, where the burning of gases can be utilized in making steam.

As every part and parcel of the machinery is thoroughly sealed, it is impossible for any objectionable odors to escape during the process of reduction. In the disposal of garbage there are three parts, solids, liquids and gases, to be looked after, and an examination of the Holthaus process shows that the solids never get outside of sealed receptacles until finished, that the water and grease are carried from beginning to end in sealed tanks and pipes, that no water is allowed to escape until distilled, and that all gases are subjected to washing and burning before escaping.

It will be observed that the operation of the machinery is automatic, and for this reason the cost of the maintenance of the plant is reduced to the minimum. Of course, the Holthaus plant can be built to any capacity. The mechanical appliances of the system are protected by eighteen patents, and the owner claims that no other sanitary process can be built without infringing. It is claimed that as well as being the only sanitary system, it is also the most economical in help required and in use of fuel, and the bi-products, especially the greases, obtained, are of much better quality than those obtained by any other method. The broad claim is made for it that it is the only system which has not been condemned by courts, boards of health or by people living in the vicinity of the plant and the only one which could be operated within the limits of a city without injury to health or to property valuations.

SPECIAL ASSESSMENTS FOR STREET SWEEPING.

Utica, N. Y., proposes to have clean streets and to assess two-thirds of the cost of sweeping against the property along the streets which are to be cleaned. A bill has been prepared authorizing the city council to let the work by contract and levy assessments against the "property benefited" for two-thirds of the cost of the work, the other third to be paid from the general fund. The council has already passed a resolution requesting the legislature to adopt this bill and the people of Utica are apparently in favor of the special assessment system for street cleaning. It is estimated that the cleaning of the paved streets of Utica, by machinery, would cost about \$16,000 a season, which would make the assessment for a 40-foot lot \$1.20. More liberal estimates place the probable assessment for a 40-foot lot at \$4.

OMAHA AND MINNEAPOLIS WATER.

F. B. Kennard, a citizen of Omaha, and R. S. Hall, counsel for the Omaha Water Works Co., have just emerged from a newspaper controversy which was interesting, if not altogether pleasant. First, Mr. Kennard wrote a very long letter in which he argued against changing the date when the city may purchase the water works from 1903 to 1908. He went into figures like this:

A comparison of prices Omaha is paying under the contract of 1880 with those other cities are paying for like service under recent contracts, or under municipal ownership, will aid somewhat in reaching an opinion as to the wisdom of extending the old contract at old rates.

The following comparative table exhibits a few rates showing the difference between what the citizens of Omaha pay for water and what the citizens of a sister city pay:

| | Neighboring Omaha. | City. |
|---|-----------------------|-------------|
| Dwellings, five rooms or less..... | \$6 00 | \$1 50 |
| Each additional room..... | 75 | 30 |
| Barber shop, one chair..... | 5 00 | 3 00 |
| Bath house, public, per tub..... | \$7.00 to 15 00 | 6 00 |
| Private stable, one horse, carriage..... | 3 00 | 1 60 |
| Meter rates, per 1,000 gallons: | | |
| 100 to 500 gallons per day..... | 35 | 8 |
| 500 to 1000 gallons per day..... | 30 | 8 |
| 1000 to 2000 gallons per day..... | 25 | 8 |
| 4000 to 16000 gallons per day..... | 15 | 8 |
| 16000 to 25000 gallons per day..... | 10 | 8 |
| Hydrants for public use, per annum, | | |
| \$60.00 to | 84 00 | Free. |
| Omaha has, according to the records of the city comptroller, 1,414 hydrants, for the use of which she is paying as follows: | | |
| For 250 hydrants, \$84 each per annum..... | \$21,000 00 | |
| For 1,091 hydrants, \$60 each per annum..... | 65,460 00 | |
| For 58 hydrants, \$10 each per annum..... | 580 00 | |
| | | \$87,040 00 |

Making a grand total of \$87,040 expense for water for public use alone, the payment for which must be provided for every year in the tax levy, being more than one-eighth of the whole tax levied for the year 1898. To this may be added the water supply for the city hall, public library, police court room and the different fire department buildings in the city.

Mr. Hall was prompt and vigorous with his reply. He wrote:

I undertake to say that that is a cunningly contrived attempt to defame the water company, and as you are responsible for such article I desire to have the name of the so-called sister city. It will be found upon examination that that city is one which does not furnish water as we do here, but either by gravity pressure or a water power, and there is no city within hundreds of miles of Omaha, nor on the Missouri river, that can duplicate Omaha rates; this includes St. Louis, Kansas City or any of the Mississippi river towns which pump their water. I challenge you to name any city which can compete with Omaha on water rates.

The falsity of this statement in your paper is in the facts which are concealed, and the purpose of such concealment is to maliciously insinuate that this company is robbing the people of Omaha, which is a libel, and one for which there should be some remedy.

Mr. Kennard replied briefly by stating that Minneapolis was the city referred to in his first letter, and then Mr. Hall gave utterance to the following:

Minneapolis owns her own plant with an interest account of about \$200,000 per year, with a construction tax on pipe laid amounting to \$42 for each sixty-six foot lot.

Minneapolis pumps by water power; Omaha pumps by steam.

Minneapolis pumps once into the mains; Omaha pumps all of the water twice, and part three times.

Minneapolis pumps against seventy-five pounds pressure; Omaha pumps against 120.

Minneapolis does not settle her water; Omaha built, maintains and operates the largest, most difficult and expensive and finest settling system in the United States.

Mr. Kennard closed the "incident" with an even column of words, from which we quote:

Yes, the conditions are different as between Minneapolis and Omaha. The earnings of the Minneapolis plant pass into the treasury of the city to help pay the city's expenses; the earnings of the Omaha plant are turned into the pockets of non-

resident plutocratic stockholders who have no interest whatever in Omaha beyond pumping splendid dividends out of the people through the water system.

It is pretty well agreed that the Omaha water system is worth about \$4,000,000; the value of the Minneapolis system is about \$4,000,000; the Minneapolis plant is bonded for \$1,830,000; the annual interest on this amount per annum at 4 per cent. is \$73,200; will "Bombastes Furioso" please tell how he makes the interest charge to be \$200,000 per annum?

Minneapolis, after paying all expense of maintaining buildings, pumps, engines, fixtures, boilers, filters, basins, tunnels, reservoirs, hydrants, mains, grounds, and paying the interest on her bonded indebtedness, sets aside in the sinking fund the handsome sum of \$100,000 per annum.

Minneapolis maintains about 3,000 hydrants without cost to the city. Omaha city pays the Omaha water company nearly \$90,000 per annum for the use of about seven-fifteenths as many hydrants. If the Omaha water company furnished this city as many hydrants at Minneapolis has placed, which cost her nothing to maintain, the cost to Omaha for hydrants alone, based on the present contract, would be \$18,010 per annum.

"Bombastes Furioso" tells us that Omaha pumps by steam; that Minneapolis pumps by water. A small portion of the water consumed by Minneapolis is pumped by water power; such as is used for fire purposes is pumped into reservoirs; the great bulk of the water used by the city is furnished from the north side pumping station, which is equipped with monstrous engines, operated by steam power. Minneapolis does not, therefore, pump by water power.

Omaha water works does not pump against 120 pounds pressure. Yes, the Omaha water company does pump her water twice and sometimes three times; this makes water very expensive. She pumps it three times when she sends it down from Florence into the Twentieth street pumping station, and from thence to South Omaha, and distributes it all over the union stock yards for the enormous sum of 4½ cents per 1,000 gallons. Omaha citizens must pay from 35 cents down to 10 cents per 1,000 gallons. This price in South Omaha is based upon the principle that the more times the water is pumped the lower the price per 1,000 gallons. Minneapolis does settle her water. Omaha water company does not, but attempts to.

BRICK FOR PAVEMENTS.

BY CHARLES C. BROWN, C. E.

The usefulness and economy of brick as a paving material have been demonstrated so thoroughly that nothing further need be said upon this point. It is desirable, however, to call attention to some methods of procedure that tend to cast discredit unjustly upon the material, and to give a word or two of warning. For example, in some districts there is practically no local paving material but brick. Gravel there is none, broken stone must be hauled long distances, and when used must have an expensive underdraining and foundation; stone block paving is still farther away, and wood is out of the question. The brick manufacturers push the sale of their bricks with reference only to present sales. Therefore, they do not insist upon good foundations, even where the soil is not good, but are satisfied with cinders or a dirty gravel, depending upon a lower course of brick laid flat to distribute the loads. Consequently unequal settlements occur due to imperfections in the subgrade, breakage of the lower course by heavy concentrated loads, or failure of the same to distribute the load over sufficient area of the soil. Muddy pavements with standing pools of water, and inordinate wear of the surface result. But beyond this, where it is possible under the specifications or the inspection to run in poor brick, it is done, to reduce the cost to the property owner, and aid in securing signers to petitions, or to increase the profits. This policy is almost suicidal and the brick men are doing much to discredit their own material by this reduction in quality for the sake of a few dollars of quick profits. Since the price of asphalt has been reduced so much, and since the introduction of portable plants for preparing the mixture for laying, the cost of pavements of this material approximates very closely to that of a good brick pavement. Instances are increasing in number where asphalt has competed successfully with brick even in a brick district, because the

property owners have become disgusted with the quality of the brick streets laid, have faith that asphalt people will give a materially better pavement, because they must have a good foundation, and see that, while it costs more than their poor brick pavements it is not much more expensive, if any, than a good brick pavement on a proper foundation.

Experience has shown the relative value of pavements of various materials under different conditions, and it is not advisable to push a given material for a location for which it is evidently unfitted. In a city where the streets are thoroughly cleaned asphalt may prove more durable than brick, as each sweeping aids in the disintegration of the brick, especially if unequal or soft in texture, and removes the resulting dust and chips, while in a city where less attention is paid to cleanliness a brick pavement may be the more durable, for the asphalt is liable to disintegrate under the action of standing water and mud. So in a small city where only a few squares of the business portion, and two or three main lines of travel therefrom are covered with a hard pavement, brick may stand the action of the mud brought on from the unpaved or macadamized streets better than asphalt, unless the latter has the constant attention of the street sweeper.

There has been some attempt to introduce brick for country roads, making a pavement not to exceed sixteen feet in width at one side, leaving a roadway of the usual width and material of the neighborhood to take the travel in ordinary weather. Even this is rather expensive if proper attention is given to the manner of laying, but in some districts it seems to be the only pavement at present available. Burnt clay roads have been tried in some localities, but apparently with indifferent success. Where brick clay is readily obtainable and the cost of good broken stone is not prohibitive, a roadway with a base of burnt clay well rolled, and a wearing surface of broken stone well filled and rolled should make a good road, at a very reasonable price. It would also have the advantage of being similar in nature to, though harder than, the common roadway adjoining, and less repair of the roadway adjoining the paved portion would be necessary, as it would not be so easy for a wagon wheel getting off the pavement to cut down alongside of it.

THE CHARTER OF GREATER NEW YORK.

PAPER IV—THE FIRE DEPARTMENT—CONTINUED.

The fire marshals for the boroughs of Manhattan, the Bronx and Richmond, Brooklyn and Queens shall possess all the powers heretofore conferred by law upon the fire marshal in the city of New York within their respective boroughs. The commissioner himself or his marshals are authorized to investigate the origin and management of fires, or violations of discipline on the part of any employe of fire department, or any supposed cases of arson or incendiaryism brought to their notice, and in any such examinations may subpoena and compel the attendance of any person or persons and the production of any books or documents in his or their possession or control, and for that purpose the corporation counsel may at any time obtain subpoenas of the supreme court tested under the name of a justice of said court, with like effect as though issued in an action in a court of record, and the subpoena may be served and proof of service made as by law provided, and upon proof of non-compliance with such order for production of books and documents, or to obey such subpoena, or to answer any question pertinent to such examination, application may be made before any justice of said court, who, if he decides the question pertinent and proper to be answered may cause the person named in subpoena to be arrested, and the laws relating to punishments for contempts usual in said court shall be applic-

able. In all such examinations the commissioner or marshals are authorized to administer any oath or affirmation, and any false swearing at such time is perjury and punishable as such. Investigations within the boroughs of Brooklyn and Queens, shall be carried on by the deputy commissioner and marshal seated in the borough of Brooklyn.

Under direction of fire commissioner, it shall be the duty of the fire marshal, or his representative when authorized in writing by said marshal so to do, to enter any building in the city, for the purpose of examining all fixtures or apparatus therein that may in any way be dangerous to firemen or occupants in case of fire, or be conducive to promoting fires, and upon finding any of them defective or dangerous shall so report to the commissioner, who may issue orders, printed or written, directing the owner or occupant to alter or remedy the same in such reasonable time as may be necessary, and he may direct the use of such materials and appliances as he may deem proper; and in case of neglect or refusal to so do within the time prescribed, the fire marshal, under direction of the commissioner, shall cause the work to be done and charge the expense to the party offending, to be sued for in the same manner as provided for the recovery of fines and penalties.

The marshal shall investigate into the cause of all fires by which any character of property is destroyed, accidentally or unlawfully, wholly or in part, and to especially inquire into whether the fire was the result of carelessness or the act of an incendiary, and shall take the testimony on oath of all persons cognizant of any fact, and cause the same to be reduced to writing and verified, and shall transmit the same to the commissioner, with a report of his conclusions in relation to the matter. The marshal shall report in writing to the fire department, the police department, the district attorney, the owners of property, or other persons interested, such facts as he may have ascertained that, in his opinion, require attention from either of said departments, officers or persons. It shall be the duty of the marshal, whenever in his opinion there is sufficient evidence to charge any person with arson, to cause them to be arrested, and furnish the district attorney with the evidences of guilt, names of witnesses, and all information obtained, including a copy of all pertinent and material testimony taken in the case, and he shall report from time to time to the commissioners the progress made in all prosecutions for arson and the result when finally disposed of.

The fire marshals shall have authority at all times of day or night to enter and examine any premises when a fire shall have occurred, and the buildings and premises adjoining and near thereto. The fire commissioner shall, whenever the public interest will be subserved supervise and direct the examinations and proceedings of said marshals, and shall make all needful and proper rules and regulations relating to the duties of the office and the manner of performing the same.

RELIEF FUND AND PENSIONS.

The commissioner of the fire department is constituted trustee of the fire department relief fund, and shall receive all moneys applicable to the same and deposit the same as trustee to the credit of the relief fund in such banks and trust companies as he may select, or invest the same in mortgages on improved property worth twice the amount loaned, or in public stocks as he may deem most advantageous for the object of the fund. The trustee of said fund shall give a bond with one or more sureties, in the sum of \$20,000, to be approved by and filed with the controller; and the said trustee, for and on behalf of the purposes of said fund, shall be entitled to receive and there shall be paid him all duties, taxes, fines, penalties, allowances, and fees to which the fire depart-

ment of New York has been or is now entitled, except as otherwise specially provided, and the trustee may take by gift or otherwise, any money, real or personal property, right of property for other valuable thing, the annual income of which shall not exceed \$30,000 in the whole; and in any year when the trustee may deem it necessary, he may receive from the board of estimate and apportionment a sum not exceeding \$10,000 to be included in the annual estimate of the department and drawn by him in like manner as his other expenses, and such amount shall be applied to the use of said fund and invested as hereinbefore provided, and provided that the sum of \$200,000, which may be received and accumulated, shall be reserved and retained as a permanent fund, the annual income of which may be made available for the purposes of such relief fund. The fire department relief fund shall consist of the capital, income, securities and credits formerly or now belonging to said funds in any of the municipal and public corporations or parts thereof, hereby consolidated into the city of New York, all forfeitures and fines imposed by commissioner upon members of the force by way of discipline, all proceeds of suits for penalties, and all license fees arising from the sale of explosives and combustibles, all proceeds of sales of condemned horses and other property in use by the department, all rewards that may be given for extraordinary services by any member of the department, except such as the commissioner may permit such member to retain, and such as has been or may be given to endow a medal or other competitive or permanent reward, all pay withheld for lost time on account of absence from duty, which is to be paid monthly by the controller to treasurer of relief fund, and the commissioner is authorized to make such deductions, except when such absence is caused by sickness or disability, for which leave of absence shall have been granted, in accordance with rules of the department, ten per cent. annually of all excise fees belonging to the city of New York, received from the granting of licenses, such sum to be paid quarterly to treasurer of the fund by the controller, such sum not to amount in any one year to more than \$150,000.

The commissioner shall have power to retire from all service, or relieve from service at fires, any member of the force, who is found, upon medical examination, to be disqualified physically or mentally for his duties, and in case the disqualification is a permanent one, induced by the actual performance of duties, or which may occur after ten years' continuous service, he shall be entitled to a pension of one-half of the annual salary received at date of retirement, but if disability is partial and only disqualifies from active duty he shall be employed in some position in the department not requiring active duty, at same pay received when such disability occurred. In case of total permanent disability, not caused or induced by actual duty, or which shall occur before ten years' continuous service, the annual pension allowed shall be one-third of annual salary at time of retirement; in case of partial permanent disability caused in actual duty, or which may occur after ten years' active service, such member may be assigned to some light duty as the medical officer may certify that he is qualified to perform, and be paid one-half of such salary as he received when retired; in case of partial permanent disability not incurred in service, or which may occur before ten years' active service, such member may be assigned to light duty, but his pay shall not exceed one-third of the salary he was receiving when retired. Any member of the force who has done active duty for twenty years or more, shall, upon his own application in writing, or on certificate of the board of medical officers that such member is unfit for duty, be retired and dismissed from the service and placed on the roll of the relief or pension fund, and paid an annual pension during life of not less than one-half of

the full salary he received when retired, and it shall not be revoked, repealed or diminished. No member of the uniformed forces consolidated by this act having a right to retire on a pension at time this act takes effect shall be deprived of such right by reason of remaining a member of the department. In cases where the retirement is caused by physical disability, the pension named is conditioned to the number of members so retired, and the amount the fund will warrant. Upon the death of a member while in active service, or after he has retired, his widow, children or dependent parents may be paid a pension, the amount to be determined by the trustee according to the circumstances of the case, and not more than \$300 shall be paid in any one year to such representatives, and such pension may be revoked at any time that circumstances warrant it, and no part shall be paid to such widow after her remarriage or to any child after it reaches sixteen years of age. If any member is killed while in the performance of duty, or at such time shall receive injuries which cause death, the trustee is empowered to award his widow a pension not to exceed one-half of his salary; if there be no widow, but children under eighteen years of age or dependent parents, the trustee may award to the guardians of such children, or dependent parents, an amount not to exceed one-half his salary. The amount of allowance to any widow shall not exceed \$1,000 per year, and shall cease on her death or remarriage, or if she is guilty of conduct that makes such further payments inexpedient; the amount of allowance to any one child, or dependent parents shall not exceed \$500, and the payments to any child shall cease at its death or marriage or when reaching eighteen years of age. If the payments to a widow are stopped by reason of death, remarriage or misconduct the trustee may make payment to the children or dependent parents, as though he had died without a widow surviving. The widows and orphans and retired members of the Brooklyn department, or any other of the corporations consolidated shall be entitled to receive from the pension fund herein created the amount they would have been entitled to on December 31, 1897, from the fire department relief funds heretofore existing.

LIFE INSURANCE.

The life insurance fund shall consist of the New York fire department life insurance fund and Brooklyn department's widows and orphans' relief fund, and all who have paid into such funds and shall continue to do so, shall receive the benefits of it. There shall be deducted from the monthly pay of each member of the department, and from the monthly pensions of retired members, and from the monthly pay of such employees of the department as shall avail themselves of this provision, the monthly sum of one dollar, which shall be held by the treasurer of the relief fund and shall be known as the New York fire department life insurance fund, and in case of death of any contributing member, there shall be paid his widow, or if none, then to his legal representatives, the sum of \$1,000 out of the moneys so assessed. If by reason of the number of deaths the money assessed and collected should prove inadequate, the assessment, in the discretion of the trustee, may be increased to not exceeding \$2 of each month's pay. None but members of the uniformed force shall hereafter be eligible to membership. If in any year, owing to excessive mortality, the condition of such fund should render it necessary, a sum not exceeding \$5,000 may be transferred from the relief fund to the life insurance fund for its use.

Any corporation organized outside of the United States and having capital or assets invested in this state of not less than \$150,000, shall be taxable on such assets or capital as the same is assessed yearly by law, and an amount thereof equal to 2 per cent. of its gross premiums,

received for insurance in the City of New York, except as otherwise provided, shall be paid to the fire commissioner, as treasurer of the fire department, and the residue of and tax shall be paid to the city of New York, and such payments shall exempt such companies from all further taxation upon its premiums, capital or assets. If such capital should be reduced below \$150,000 or withdrawn entirely, in either event, they will be liable to pay the tax upon its premiums. On the first day of February in every year, every person doing business in the city as the agent of any fire insurance company not incorporated under the laws of state of New York, shall pay to the treasurer of the fire department two per cent. on all premiums received, or that is agreed to be paid, during the year ending on the next preceding first day of September, and such agent must verify by his oath such account, and no person shall act as such agent or procure any insurance on which such tax is required until he shall have filed an undertaking with the commissioner with such sureties as he may approve, that he will truly make such accounting and payments. Every person who shall effect any insurance without filing such approved undertaking, or without filing a renewal of such undertaking when required shall, in either case, and for each and every offense, forfeit \$1,000 to the fire department.

The trustees of the Exempt Firemen's Benevolent Fund of the City of New York, shall be entitled to collect and shall be paid until January 17, 1907, the tax on receipts of foreign fire insurance companies doing business in that part of the city of New York, as formerly constituted, below the twenty-third and twenty-fourth wards, and the corporation known as "The Exempt Firemen's Benevolent Fund Association of the Twenty-third Ward of the City of New York," shall be entitled to collect and shall be paid such tax on business done in the twenty-third and twenty-fourth wards, and all returns and undertakings required by this section in the territory named until that period shall be made to the treasurers of the trustees of these stated corporations, and the proper officers in such corporations will make quarterly sworn statements to the fire commissioner of the amounts received, from whom, and what source, on account of said tax, and at the same time, they will each pay over to the fire commissioner, for the use of the relief fund of the fire department, 45 per cent. of the several amounts, and to the treasurer of the Firemen's Association of the State of New York, 10 per cent. each of said amounts for the endowment and maintenance of the volunteer firemen's home at Hudson.

From and after the 17th of January, 1907, and until the 17th of January, 1917, the said percentage of tax shall be collected by the treasurer of the fire department, who shall quarterly make a sworn statement to the trustees of the Exempt Firemen's Fund, and the treasurer of the Firemen's Association, of New York, of amounts collected in the city of New York as formerly constituted below the twenty-third and twenty-fourth wards, and shall pay over severally to the trustees of the Exempt Firemen's Fund of the City of New York, 45 per cent. of such amount, and to the treasurer of Firemen's Association of New York, for the endowment and maintenance of the volunteer firemen's home, 10 per cent. The same disposition shall be made of the same percentage of the tax as shall be collected in the twenty-third and twenty-fourth wards, except that 45 per cent. shall be paid to the Exempt Firemen's Benevolent Fund Association of the Twenty-third Ward of New York city; the treasurer of the fire department shall appropriate the balance of such moneys collected to the purposes of the relief fund of the department.

Until January 17, 1917, the percentage of tax on foreign insurance companies doing business in the borough of Brooklyn, shall be paid to the fire commissioner, who

will dispose of it as follows: 45 per cent. to the relief fund of fire department, 10 per cent. to the treasurer of the Firemen's Association of State of New York, who will transmit it to the volunteer firemen's home at Hudson, N. Y., 20 per cent. to the orphans' fund of the late volunteer fire department of the western district of Brooklyn, 13 1-3 per cent. to the widows and orphans' fund of the late volunteer department of the eastern district of Brooklyn, 3 1-3 per cent. to the widows and orphans' fund of the late volunteer fire department of New Lots, 2 1-3 per cent. to the widows and orphans' fund of the late volunteer fire department of the town of Flatbush, 2 1-3 per cent. to the widows and orphans' fund of the late volunteer fire department of the town of Gravesend, 2 per cent. to the widows and orphans' fund of the late volunteer fire department of New Utrecht, 1 2-3 per cent. to the widows and orphans' fund of the late volunteer fire department of Flatlands.

A WATERTIGHT RESERVOIR.

BY ALEXANDER POTTER, CONSULTING ENGINEER, NEW YORK CITY.

The statement that a large percentage of the reservoirs in this country are not practically watertight seems extravagant, but is nevertheless not far from the truth. When we consider that most of the large reservoirs have been designed and constructed by engineers of recognized skill and ability, it would seem at once apparent that this condition of affairs is due not so much to the manner in which they have manipulated the materials used in their construction as in the materials themselves. One of the most common mediums in reservoir construction is clay puddle, applied in various thicknesses, depending upon conditions, such as depth of water, character of sub-soil and accessibility of the puddling material. Concrete has also been largely used in varying proportions. The results attained with either of these are not such as would warrant their universal adoption.

The pressure of the water on the former causes an infiltration through it, and subsequently an opening to the porous strata below. With concrete it seems unreasonable to suppose that a homogeneous mass covering hundreds and thousands of square feet can be applied without a possibility and almost certainty of cracking, even with the use of the very best materials obtainable. The locating and detecting of a crack almost invisible, yet large enough to destroy the effectiveness of a reservoir, is a difficult and well nigh impossible task, and, when discovered, its repair is perhaps even more difficult.

It seems then that we must look to other materials to accomplish this result, and asphalt would naturally suggest itself as a most likely medium. The ease with which the asphalt adapts itself to any resisting or possible irregularities in the bottom or sides would seem to recommend its use.

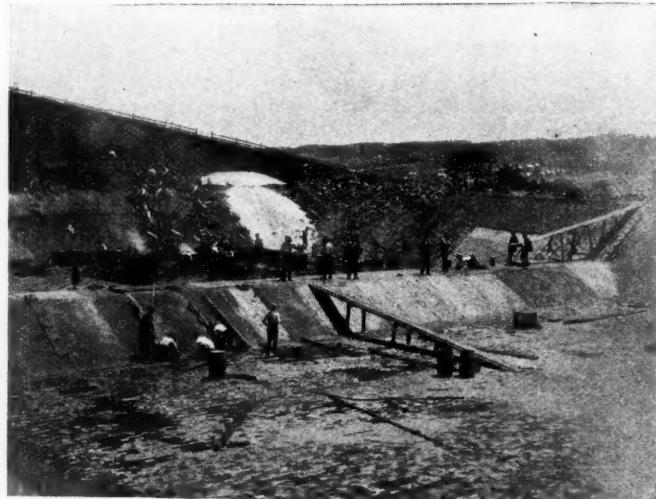
This has already been tried in different parts of the country, but with indifferent success owing, in large part, to the lack of knowledge as to the best composition and its method of application. The general prescription of asphalt is as likely to secure satisfactory results as the taking of Paine's Celery Compound for every ailment that flesh is heir to.

The object of this article is to describe a method adopted by the writer in using this material upon a 2,000,000 gallon reservoir at Coatsville, Pa., which was reconstructed early last spring, and is now absolutely watertight. For this work we used a natural rock asphalt from which the essential oils had not been extracted by the process or refining as in the case of most of the asphalt used for street pavements.

The reservoir itself was first constructed about fifteen years ago upon a side hill partly in rock excavation. The

design called for two feet of clay puddle over the bottom and side slopes, over which was placed brick, a portion of which were laid flat, the upper portion of the side slopes being laid on edge. This reservoir was never watertight. In fact it could never be filled. Attempts were made from time to time to repair it and make it fit for service, but without avail; the clay puddle, being largely intermixed with mica, while the slate rock, underlying portions of the reservoir, stands on end, both of which conditions are unfavorable for watertight work.

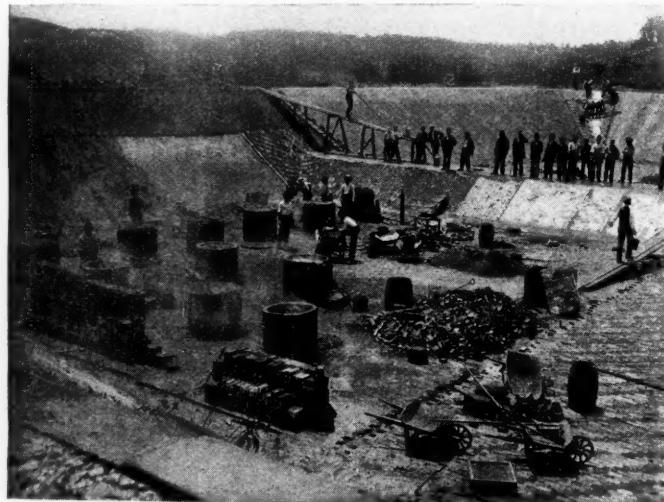
Specifications were prepared by the writer for lining the reservoir with asphalt. The contractor was required



BUILDING THE COATSVILLE, PA., RESERVOIR.

to remove all bricks from within the reservoir and to thoroughly drain the clay puddle lining. The bottom and sides were then to be relined with brick, permission being given to use whatever good brick could be found upon the work. Over the brick was spread the asphalt, one inch thick over the bottom and three-quarters of an inch upon the sides, which was applied in two layers.

The asphalt specified upon this work was the Val de Travers mastic, commonly known as Neuchatel, the com-



BUILDING THE COATSVILLE, PA., RESERVOIR.

position being as follows: 50 per cent. Neuchatel natural bituminous limestone rock, 30 per cent. grit, 10 per cent. sharp sand and 10 per cent. refined bitumen. The mixture was heated in French kettles, shown in the accompanying photographs, to a temperature of 400 degrees Fahr., and applied to the work in wooden buckets and smoothed with wooden spatulas.

Previous to the application of the asphalt the surface of the brick was painted with a thin coat of refined bitumen

and benzine, which served the double purpose of filling between the joints of the brick and forming an absolutely adhesive bond between the brick and the asphalt lining proper. Holes were afterwards chopped in the bottom of the reservoir, but the asphalt could not be removed without tearing away portions of the bricks themselves.

The photographs show some parts of the work in all stages of construction. In photograph No. 1 is seen, upon the slope, the cord wood for the fires, the grit and the cakes of asphalt. On the partition wall can be seen the plain brick, then a portion which is painted, next, the application of the first layer of the asphalt and then the second. In photograph No. 2 the method of applying the asphalt to the rounded corner of the reservoir is observed.

The asphalt was carried up over the top eighteen inches, and on the outside of this a gutter fifteen inches wide and four inches deep extends around the reservoir. This gutter was constructed of concrete with one inch neat cement finish. It has a fall of 44 per cent. from the middle of the sides parallel to the hill side to the two front corners. It is also raised above the reservoir, giving it finished appearance not otherwise possible; at the same time it forms a barrier to waters working their way back of the lining.

Since the application of the asphalt lining the reservoir is absolutely watertight. Wells below it, previously full, are now dry. While this lining has not yet shown any signs of creeping, I am of the opinion that the very best results can be obtained by protecting the asphalt from direct contact with the water and the sun's rays. This can be secured by applying to the surface, while still hot, hard burned tile 1 inch thick, previously dipped in refined bitumen, and the joints filled with asphalt.

If this be done a thinner coat of asphalt could be applied which would offset the extra cost of the tiles. The added advantages of this construction would give a greater ability to withstand the effects of ice, and the great number of joints would easily permit the lining to adapt itself to any settlement in the embankment. A five year guarantee and bond was required of and secured from the contractor.

DETROIT CONVENTION ARRANGEMENTS.

The committee of the city council of Detroit having in charge the arrangements for the convention of the League of American Municipalities held a meeting on March 2, at which Mayor Maybury and Secretary Gilkison were present. Plans for the convention and for the entertainment of the delegates were discussed, and it was determined to push the arrangements for the big event with much vigor. The council will most likely, upon recommendation of the committee, make an appropriation for properly advertising the convention and for the entertainment of the hundreds of city officials who will journey to Detroit. It is the present intention of the committee to hold the convention in the Light Infantry Armory, and to use the Detroit Auditorium, opposite to the armory, for the exhibits of machinery, supplies and appliances used by municipalities. All of the Detroit municipal departments will be asked to co-operate in entertaining the visitors, and it is proposed to have the electric lighting plant and the waterworks open for inspection day and night. Trips to beautiful Belle Isle, trolley rides, steam-boat excursions and a parade of the fire and police departments are some of the features of the entertainment programme. It is expected that upwards of one thousand city officials will attend the convention at Detroit, and the people of that city will put forth every effort to take care of the crowd in first-class style. About fifty mayors will unite in extending an invitation to President McKinley to be present. The convention will be held August 1 to 4.

JERSEY CITY'S WATER SUPPLY.

Probably the most important waterworks issue now under consideration in the United States is that of Jersey City. Here the question of municipal versus private ownership does not enter into the discussion, because already the city is bonded to the full extent permitted by law and bids have been received from private companies. The decision as to the choice of a water supply should be based upon those considerations most nearly approximating to municipal control and offering the most favorable opportunity for final municipal ownership. The aim also should be to secure to the city such a water supply as will be ample for its future growth and a water shed absolutely free from all present and future contaminations. These premises being stated, it will be of interest to consider what chance Jersey City stands of securing these conditions from the different bids now being considered by her board of street and water commissioners.

Jersey City formerly received its supply by pumping from the Passaic River, with an intake at Belleville. Above this intake were located such manufacturing towns as Paterson, Clifton, Passaic, Lodi, Rutherford and Belleville. Since the construction of this pumping system in 1852, these places have grown from small and unimportant towns to manufacturing centers, pouring their sewage in threatening quantities into the Passaic, and turning a formerly pure and wholesome water supply into a more and more polluted stream. Jersey City soon felt the effects of this pollution of its water supply, though the water shed which fed this system was seven times greater than the water shed of the Rockaway River, from which several of the bidders propose to take water.

In 1896 a contract was entered into with the East Jersey Water Company, a company formed to supply water to the cities of northern New Jersey, and the old pumping system was all but abandoned. At present Jersey City is furnished with water by this company, the supply being the surplus not used by the city of Newark from its plant on the Pequannock River, which is a feeder of the Passaic. In the year 1900, however, this plant becomes the absolute property of Newark and must be turned over in *toto* by the East Jersey Water Company, which now operates it. Before that time, therefore, Jersey City must secure a new supply or return to its old pumping system on the Passaic. This latter to a city like Jersey City would be almost calamitous. So polluted has become this source of supply that the city could expect nothing less than a general epidemic of typhoid and an immediate exodus of many of its best inhabitants. This would mean a paralysis of many industrial interests and a general setback to a large and thriving city. Hence the seriousness of the question which now confronts the water board.

In casting about for a possible source of water supply, we find that the East Jersey Water Company claims to control all rights to the Passaic and its tributaries; these tributaries including the water sheds of the Pompton, the Wanaque, the Pequannock and the Rockaway rivers, with its tributary, the Whippoorwill. Out of the eight formal propositions now under consideration by the board, two were from the Rockaway and Hudson Company, of Jersey City, for water from the Rockaway river; three from Patrick H. Flynn, of Brooklyn, for water from the same river. Five of these propositions, then, appear to be made upon rights already claimed by the East Jersey Water Company, viz., water from the Rockaway River. This on the face presents a peculiar state of affairs, in that the East Jersey Water Company, while claiming alone to control these rights, declined to bid under the city's present advertisement. This at the very

start casts a cloud upon the title of the companies bidding upon waters from the Rockaway. The question suggests itself: Are the Rockaway and Hudson Company or Patrick H. Flynn, of Brooklyn, merely covers for the East Jersey Water Company? The presumption is certainly strong that here may lie some undiscovered connections or that the East Jersey Water Company wish to involve Jersey City, in case the contracts are let to these bidders, in a long series of difficulties, so that time may be gained in which to develop and complete the enlarged system which they claim in their letter of protest to the board that they are now engaged upon. As it will require at least two years to install any perfectly working system, if the contracts are let at the present time, such delays would, as the East Jersey Water Company well know, place Jersey City in the dilemma of being compelled to return to their old and increasingly polluted Passaic supply or be at the mercy of the East Jersey Water Company in accepting whatever terms they may then see fit to dictate. Certainly no contract, requiring a supply from the Rockaway River and its tributaries, would be left unchallenged by the East Jersey Water Company, or escape, except by a miracle, "the law's delays" and legal entanglements requiring years to unravel.

It is to a supply, unencumbered by such difficulties and clouds upon the face of its title, no matter how high the price bid, that Jersey City must look, if it would escape the clutches of corporate dictation and rapacity in a time of dire necessity. In fact, the lower the bids the greater the presumption of dangerous rocks of legal difficulties hidden under the apparently placid and fair surface. Moreover, it has been stated in public by an official of the East Jersey Water Company, that at the present rate of charge, viz., \$43 per million gallons, the company was supplying Jersey City at cost. How then, can companies not already in the field with plants constructed expect to furnish or guarantee to supply Jersey City with water at any such price as \$35 per million gallons, the bid of Patrick H. Flynn, much less at \$26.80 per million gallons, the bid of the Rockaway and Hudson Company.

It has already been stated that for Jersey City to be compelled to go back to the Passaic water supply would be a calamity and would cost the city more in the end than the most extravagant system now imaginable; in fact, it would be criminal. This leaves for consideration the bids on the Rockaway supply, the bid of John C. Sheehan, et al., for water from the Hohokus and Raritan Rivers, and the bid of The George B. Inman Contract Co., for waters from the Kittantinny Mountains.

The territory embraced in the Rockaway water shed is made up of a country comprising a large percentage of areable land, in which the suburban population is already large, being 113 to the square mile in 1893, and rapidly increasing, until now it is about 180 to 200 persons to the square mile. Along the banks of the river above the prospective intake are the thriving towns of Rockaway, Port Oram, Hibernia, and others, with the city of Dover, of 10,000 inhabitants, lying on either side. With a water shed of only 118 square miles and a water flow which in the dry season becomes exceedingly low, it would be but a few years before sewage and drainage pollution from the urban and suburban places would prove a menace to what may now appear to be a perfectly safe and feasible source of supply. Furthermore, the Rockaway is a feeder of the Morris Canal, which is a public highway, and even admitting that the ownership of the water rights and the canal are identical, it is a question whether the water can be diverted from such canal purposes. Unless this could be accomplished there is not sufficient water in the river to permit its use as a water supply. There are also large mill interests which such a diversion would

greatly affect, which would have to be purchased at millions of dollars.

The water shed of the Hohokus and the Ramapoo valley is, according to the statement of the progenitors of that scheme, but 23 square miles, an area entirely too small to be considered, but the scheme from the Raritan River might supply this deficiency, and sufficient storage make the scheme feasible, if otherwise unobjectionable.

After carefully investigating all the sources of supply heretofore mentioned, there still remains to be considered the scheme proposed by The Geo. B. Inman Contract Co., less known, perhaps, because of its remoteness. In order, therefore, to be carefully informed as to this source, a member of the CITY GOVERNMENT staff made a tour of the entire Kittantinny water shed, thoroughly investigating the character of the proposed scheme from this source, which seemed to be almost ideal for the purity and quantity of its water, the like of which Jersey City, a few years hence, cannot secure for even a fabulous sum, because the growing towns and villages below will soon have taken liens upon the supply now offered.

The water shed of the Kittantinny Mountains lies in perhaps the most beautiful and picturesque section of New Jersey, being in the Highland portion. It is not, however, a section which invites habitation. On the contrary, much of it is still in primeval forest, shot with bold rocks of slate and conglomerate (the limestone of the paleozoic formation not reaching as far as this section), where it would be impossible to obtain even the scantiest sustenance. The valleys of this section, lower down, are fertile and inhabited, but the portion from which the water supply would be drawn lies wholly above these areable portions. The water is collected at an elevation of 1,900 feet to 860 feet above the sea level, that of the Rockaway system being supplied at an elevation of 480 feet.

There are sixty miles of mountain road traversing this shed, 75 per cent. of which is forest and wild mountain land with no inhabitants. The population of this water shed would average scarcely five persons to the square mile, as opposed to the 180 or 200 persons on the Rockaway water shed, and a proportionately large number upon the others presented for consideration. There are no cities, no villages, and not so much as a hamlet upon the entire territory draining into this supply, nor is there chance of any in the future. The principal lakes forming the reservoirs, which would be greatly enlarged for storage purposes, are Culver's Lake, Long Pond, Quick Pond, Round Pond, Sucker Pond, Sand Pond, Masshipacong Pond, Lake Marsha and Morris Pond, from the latter of which Newton already draws a supply of a million gallons per day. These lakes will provide a storage, when all improvements are made, of ten billion gallons, sufficient, when Jersey City is taking its full quota of water, for a five month's supply without any rainfall. In the immediate vicinity of Culver's Lake there are at present a few summer cottages. These would of necessity be removed by the raising of the lakes when the dams are built.

With the storage above mentioned there would be necessary about 70 square miles of catchment area. The natural drainage area tributary to the ponds, according to the geological survey of the state, is about 20 square miles. The balance of the water shed is obtained by the construction of a system of ditches or canals running along the foot of the mountains, connecting the numerous small lakes and intercepting the water of the streams and water courses of the mountain sides, on either side of the Kittantinny range. The connection of the two systems is made through Culver's Gap and the waters are then led to the great storage reservoirs below, which will cover at least 2,000 acres at an elevation of 860 feet above Jersey

City. This system of canals increases the water shed to an area of over 100 square miles. By a further extension, this system could be made ample to meet all needs occasioned by the future growth of the city, and can produce an almost unlimited supply of absolutely pure water.

With such a supply, taken from the wild high forest portion of the state, Jersey City would secure a water supply which is not only now absolutely pure and free from contamination, but which of necessity must always remain so. The chemical analysis of the water of the lakes forming the storage reservoirs proves it to be without a trace of any decomposed animal or vegetable matter, and perfectly soft, owing to the absence of the limestone, requirements which are of the utmost importance. Should the city turn her attention to any supply less secure of pollution than this in the mountain fastnesses of the Highlands, she may expect in the years to come to face such difficulties as now confront her and have to deal with a supply growing ever more and more contaminated on account of the growth of the towns, which must inevitably take place. Such is the situation which Philadelphia now faces with the sewage of Norristown, Pottsville, and other places, constantly menacing her water supply from the Schuylkill.

It cannot be denied that popular sentiment is growing in favor of municipal ownership of all public utilities. It would seem, then, that that proposition which in the end secured to the city the ownership of its own plant has much to commend it over those which do not. While all the other bidders ask from \$6,000,000 to \$10,000,000 for their plants at the end of a given period, the bid of the Geo. B. Inman Contract Co. contemplates the handing over of the entire plant free from incumbrance without cost to the city at the end of 25 years. The estimated cost of this scheme is somewhat more in the first instance than the others under consideration. This is as it should be, on account of the greater length of pipe required to convey the water from remote and uncontaminated sources. As the plant is to be handed over to the city without charge, the actual cost to the contractor is of no vital importance to the community, especially as an engineer appointed by the city will have supervision of the work of construction.

This is approaching very near to municipal control and it will thus be seen that there is at least one method by which Jersey City can obtain a supply of absolutely pure water by a gravity system without incurring debt and without the possibility of an exorbitant future charge.

METERS WOULD SAVE MILLIONS.

John C. Trautwine, Jr., chief of the water bureau of Philadelphia, has just issued his annual report. After reciting the fact that the consumption of water in Philadelphia has increased from 36 gallons daily per capita in 1860 to 215 gallons daily per capita in 1897, the report says:

"The remedy is simple. The waste must be stopped by making it to the interest of each consumer to avoid waste, at the same time encouraging him to the fullest and freest use of water. This can be done by the general introduction of water meters. Meters will injure those, and those only who are now taking more than they pay for, shifting the burden upon the community. Householders can take all the water they want for the most liberal domestic use, and for every luxury except waste, and yet reduce their bills below the present schedule charges, which necessarily saddle the careful and conscientious with the wastefulness of the careless and unprincipled. The general introduction of meters would therefore undoubtedly reduce the revenues, as well as the

expenses of the Bureau of Water, but this, even if it resulted in a decrease of net earnings, would be a matter of small moment when compared with the city's loss of the control of her water supply.

"It is often urged that meters would work hardship to manufacturers, whom the city should seek to encourage. The present water rate of 30 cents per 1,000 cubic feet, or 4 cents per 1,000 gallons, is just about what it costs the city to furnish the water, but it is considered advisable to give water to any or to all manufacturers at less than cost; the city can do this as well with meters as without them. It is safe to say that the general introduction of meters would, without in the slightest curtailing any one's free use of water, reduce our consumption one-half solely by cutting off utterly unprofitable and defenseless waste. It would then practically double the capacity of our present works, giving plenty of water for all.

"It would cut in two the cost of installation and operation of filter plants or that of bringing water from a distance. Even without the introduction of any means for purifying the water, it would at once improve the quality of that furnished through our mains; for we could then more easily cease pumping during the seasons of muddy or coal-polluted water, and give the water in the reservoirs a longer time for subsidence.

"The minimum flow of the Schuylkill would once more exceed our maximum draft upon it, our annual conflict with the Schuylkill Navigation Company would be avoided, and the specter of the city's acquisition of that company's properties would be once more suppressed. Finally, the improvement and development of the supply would be brought well within the city's own means.

"In my report for 1896 I submitted an ordinance providing for and regulating the use of water meters. The main provisions of this ordinance were:

"(1) The metering of all manufacturing establishments and other large consumers.

"(2) The metering of residences upon application of the owners.

"(3) The metering of residences without the consent of the owners in cases of waste.

"The passage of this ordinance, with the necessary appropriations, would solve the water problem."

IMPROVEMENTS AT NEWPORT NEWS.

The city of Newport News, Va., which has sadly needed public improvements for many years, has authorized the construction of a complete system of sewerage to be carried out under the plans and supervision of Alexander Potter, consulting engineer, of New York city. Four new school buildings and a new jail are to be built this year. Besides these there will be one tunnel and two overhead crossings of the twenty tracks of the C. & O. Railway, which at present divide the city. These improvements, with the construction of a million dollar dry dock by the shipyard company, will make Newport News an active place during this year.

A POSITIVE NECESSITY.

We receive so many letters like the one printed below that we begin to think that CITY GOVERNMENT is a positive necessity to every city official in the land.

FARGO, N. D., Feb. 22, 1898.

Your publication seems to be improving all the time; its last issue (February) is the best of all. The statistics you give on water works and public lighting are worth more than many times the subscription price. I, for one, would not do without CITY GOVERNMENT as long as I hold a municipal office.

J. A. JOHNSON, Mayor.

CITY GOVERNMENT.

Devoted to all Departments of Municipal Work.

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RATES FOR ADVERTISING SPACE QUOTED ON APPLICATION.

NOTE AND COMMENT.

A number of the leading fire hose manufacturers have recently received letters from the Pittsburg *Leader* asking why they do not submit proposals for furnishing hose to the city of Pittsburg. The question is easily answered. All manufacturers, excepting the Eureka company, are shut out by the specifications, which are cleverly drawn to prevent any competition for Pittsburg hose contracts. If the *Leader* will ask Director of Public Safety Brown wherein Eureka hose is superior to all other brands, and demand proof for any claims the director may make, it may be able to publish a story that will be amusing if not edifying. The intent of the law requiring city officials to advertise for bids on public supplies is undeniably to secure free and open competition and to prevent the consideration of personal and private interests in the letting of public contracts. The public official who defeats the intent of such a law by drawing specifications under which only one company can submit acceptable bids deserves to be looked upon with suspicion. It may be that his motive is to secure for the public what he considers a superior quality of goods, but it is unwise to credit him with such a motive when the goods happen to be fire hose and he specifies a particular brand which is positively known to have many equals.

Nothing can be more important in municipal management than that fire hose should be bought and sold strictly on its merits. The safety of life and property not infrequently depends upon the quality of hose used by our city fire departments, and every precaution should be taken to avoid the serious risks involved in the use of hose that cannot be depended upon to stand the severe strain demanded of it, and is likely to burst at a critical moment. The importance of providing our fire fighters with reliable hose is obvious. That corrupt means should be employed by certain manufacturers to sell their hose must be deplored, not only on account of the criminal acts involved, but because such practice burdens our fire departments with hose of inferior quality. The case of attempted bribery at Poughkeepsie, N. Y., therefore, deserves the most serious attention and careful investigation. It is a case in which an agent of the Eureka Hose Com-

pany, of New York, is charged by Alderman John T. Bayer with offering him 20 per cent. of the bill if his bid for hose was accepted. Bayer also charges the agent with sending him a mackintosh for a "present," which he promptly returned. The Eureka agent was arrested at Syracuse and brought back to Poughkeepsie, where he gave \$800 bail to appear for examination. It is to be hoped that the matter will be probed to the bottom, so that the facts may be published for the benefit of the fire department officials throughout the country.

An address to the people has been issued by the democratic minority in the New York legislature. In this address the minority members declare in favor of everything that the people have been demanding for years—home rule, dollar gas, municipal ownership of public franchises, reduced telephone rentals, rapid transit in New York city and the suppression of trusts. What a pity it is that the democratic ring in New York never thought of making such a declaration at times when it had the power to legislate. And how sad it is to reflect upon the fact that all these good things are promised to the people by a minority who lack the power to give out anything but buncombe.

The commissioner of public works of Peoria, Ill. Mr. M. W. Manning, reports that "if the pavements laid there in 1892 and 1893 are to be taken as any criterion of what may be expected in the future, asphalt pavement, as a durable and satisfactory method of street improvement, is both expensive and inadequate." The commissioner refers particularly to the Trinidad Lake asphalt pavement on High street, which was laid by the Warren-Scharf Company in 1892, and is now practically worthless. This pavement was guaranteed for five years, and at the end of that term it is "a succession of breaks, rolls and depressions from end to end." Similar cases are reported from other cities, and public officials are slowly learning, by costly experience, that asphalt paving contractors have a way of constructing pavements to fit the guarantees given. At the Columbus Convention of mayors and councilmen, a delegate asked how long an asphalt pavement would last, and the mayor of Erie tersely replied: "Just as long as it is guaranteed."

A good mayor or a good councilman is judged by the economy with which he administers the affairs of the city, town or borough. The rock upon which so many ships of state are wrecked is a false idea of what is an economical administration. That mayor or that council who, during his or their administration, spends the least amount of money, who reduces the tax rate the most, in the end, may prove the most extravagant of administrators. Take, for example, the question of the introduction of a system of sewerage. It has been demonstrated over and over again that the saving affected to the community by the reduction of the death rate from contagious diseases has paid for all expenses of constructing and operating of a complete sewerage system. In an article entitled, "The Relation of Typhoid Mortality and Sewerage," by William Osler, M. D., in the *Maryland Medical Journal*, the author points out that the death rate from typhoid fever alone at Baltimore, Md., is four times as great as it should be, and that the probable reduction in death rate would save the city annually a sum sufficient to pay the interest of \$12,000,000. That estimate is arrived at by computing the loss to the community of a person in the prime of life at \$2,000, funeral expenses at \$25, and the ratio of one death to 8 1-3 cases, loss in wages at \$1 per day, and nursing and doctor's bill at \$25 per case.

These figures are not excessive. In the United States sanitary improvements have not been developed to such an extent as in Great Britain and Europe. In America it is the exception where a large city makes any attempt at the proper disposal of its sewage, and very many of them do not even have a scientific plan of the sewers. In Europe the exception is the other way. When we consider, therefore, that a list of thirteen of the largest cities of the world, having a death rate from typhoid fever under ten per 100,000 living, contains no American city, and that in another list containing thirteen cities with a death rate of over sixty per 100,000, all but three are American cities, we should not be surprised at the result above stated. Nor is the measure of the death rate in the city itself due to typhoid fever the only forceful argument in favor of better sanitary improvements in the cities. In the towns, villages and country districts below the city which dumps its crude sewage into a creek or body of water incapable of properly taking care of it, typhoid fever is always above the normal. The responsibility for this rests directly upon the city. The generality of this method of passing on to our neighbors a nuisance which we ourselves should abate is so common that it would be quite unfair to point out specific cases. The sewage of one city forms in whole or in part the water supply of another. Analyses of many public water supplies prove beyond a doubt the existence of purified sewage. The old theory that a river purifies itself in a given distance has long since been exploded, and the accumulation of evidence favors the substitution of another theory, viz., that a stream once polluted never again becomes quite pure. Expenditures for sanitary improvements never carry the disapproval of intelligent people, and sooner or later, that official who champions the introduction of measures designed to increase and insure the healthfulness of the city, will live longer in the memory of his fellow-citizens than he who would claim the distinction of being "a watch dog of the treasury."

In a certain city now contemplating the construction of sewers, a unique and surprisingly primitive argument has gained weight against the need of sewers. It was that if "filter beds, through which sewage was allowed to percolate, purified the sewage, why will not the ground under the city into which the cesspools leach perform the same work?" Surely this is a most astonishing argument to those scientifically informed, but to the layman it may seem a natural and proper question, because it may not be clearly understood that filter beds, in order to work properly, must rest periodically. The water is drawn off through the underdrains, and the beds become filled with air. It is this which supplies the oxygen to the bacteria which attack the next dose of sewage put upon the beds. It is evident that this condition is not met in the bottled-up cesspools or saturated ground.

PRESIDENT MacVICAR VICTORIOUS.

President John Mac Vicar, of the League of American Municipalities, has been renominated by the republicans for mayor of Des Moines. On account of his strong inclinations for municipal control of franchises, Mayor Mac Vicar was given a hard struggle at the primaries by the corporations. He succeeded, however, in carrying every precinct in the city by a comfortable majority. He received nearly three times the number of votes cast for his opponent, John Sherman. The election occurs on March 28, and Mayor Mac Vicar is now almost certain of victory. The congratulations of all the members of the League will go out to Mayor Mac Vicar upon the success of his local campaign.

PERSONAL.

—W. W. Southgate has been appointed city engineer of Nashville, Tenn., to succeed J. A. Jowett.

—H. W. Cheadle has been elected city clerk of Duluth, Minn., by the new council. The retiring clerk, C. E. Richardson, leaves a most enviable record.

—James R. Goodale has been appointed a member of the fire and police commission at Utica, N. Y. He succeeds Robert Boyce, who recently resigned.

—William O'Neill has resigned as street commissioner of Fargo, N. D., and will go to the Klondike. Rowland H. Johnson has been appointed to succeed him.

—Mayor Josiah Quincy, of Boston, received a very complimentary notice of the various reforms accomplished by his administration in a recent issue of *Leslie's Weekly*.

—Hon. George E. Green, for several terms the popular mayor of Binghamton, N. Y., has been spending the last few weeks in New York city, where his efforts have been devoted to booming the Commercial Travelers' Fair.

—Mayor Arthur C. Hastings, of Niagara Falls, N. Y., was re-elected, on March 1, by a majority of 225 votes over M. B. Butler. Mayor Hastings' majority last year was only 18, and the increase is a token of the popularity of his administration.

—Felix Chillingworth, of the New Haven board of aldermen, was a caller at this office last week. He is making a special study of the subject of special assessments for street improvements, with a view to reforming the method now in practice at New Haven.

—City officials of Middletown, N. Y., have been elected by the council as follows: City clerk, I. B. A. Taylor; city attorney, John C. R. Taylor; city engineer, Van Allen Harris; superintendent of streets, John M. Wilcox; superintendent of fire alarm, Frank T. Smith; chief of police, Clinton C. Veber; park commissioner, Hugh Allen.

—James A. Lavery, of the Poughkeepsie, N. Y., city council, was recently elected president of the Working-men's Federation of New York State. He is one of the most active and effective workers in the labor cause in New York and will doubtless head the state organization in a most creditable manner. Mr. Lavery introduced the resolution at the Columbus convention by which the League of American Municipalities committed itself to the support of union labor.

PUBLIC LIGHTING.

—Gloversville, N. Y., has 109 arc lamps of 1,200 c. p. each. The price per lamp, per year, under a five-year contract, is \$92.59.

—Sioux City, Ia., pays \$95 per lamp, per year, for 115 arc lamps of 2,000 c. p. on a five-year contract. The moonlight schedule is in force.

—A special committee of the Springfield, Ohio, council is now investigating the lighting question with a view to establishing a municipal electric plant.

—Seneca Falls, N. Y., is lighted by 77 arc lamps of 2,000 c. p., burned from early twilight to 1 A. M., at \$65 per lamp, per year, on a five-year contract.

—Perth Amboy, N. J., uses ninety-two 2,000 c. p. arc lamps, on all night schedule, for street lighting. The contract price is \$87.60 per lamp, per year.

—City Electrician Ellicott will make extensions to the municipal electric lighting plant at Chicago in the near future. About \$150,000 will be spent in the work.

—Newark, N. J., uses 1,621 arc lamps of 2,000 c. p. for street lighting. The contract price of a lamp, per year, is \$98.55, and the contract runs for ten years from September, 1893.

—There are 442 arc lamps of 1,200 c. p. at New Haven, Conn. The price per lamp, per year, is \$98.55. The con-

tract is for three years, and lamps burn all night and every night.

—The streets of Pittsburg are illuminated by 2,100 arc lamps and 2,800 gasoline lights. On five-year contracts, the city pays \$96 per year for each arc and \$17.95 per year for each gasoline light.

—A new contract for street lighting has just been made at Big Rapids, Mich. The contract is for three years, and provides for 1,200 c. p. arc lamps, all night and every night, at \$47.50 each per year.

—Mayor Thompson, of Henderson, Ky., is urging the city to build and operate an incandescent light plant. He has an estimate showing that a plant with capacity for 2,400 incandescent lamps can be built for \$8,450.

—The streets of La Crosse, Wis., are lighted by 213 arc lamps of 2,000 c. p. each, fifteen of which are on five iron towers from eighty to 150 feet high. The lamps are burned on the Philadelphia schedule and, on a five-year contract, cost \$85 per year each.

—A committee of the Birmingham, Ala., council is investigating the cost of a municipal electric plant. The present lighting contract, which was made in 1889, and under which the city pays \$108 per 2,000 c. p. per lamp per year, expires in September, 1899.

—The contract for gas street lights at Omaha requires the city to provide all lamps and posts and pay for all breakages and repairs. The posts cost \$8 each, and the lamps \$3.50, and the expense of breakages and repairs has been known to run as high as \$10 per lamp per year. The gas company furnishes nothing but the gas burned, for which the city pays \$25 per lamp, per year.

—The Indianapolis Gas Company has begun action in the United States district court to have the recent ordinance passed by the city of Indianapolis reducing the gas rate to 75 cents declared illegal. The company claims that gas cannot be manufactured and delivered at the rate fixed by the Indianapolis council. City Attorney Kern has filed an answer to the suit in which he gives statistics to show that the Indianapolis Gas Company can sell gas at 75 cents per thousand with profit.

—Since the gas works at Philadelphia have passed under the control of a private corporation there has been a noticeable improvement in the candle-power of the gas furnished. The new company has established a number of branch offices where orders can be left, bills paid, the latest improved devices for the utilization of gas examined, and where every consumer is courteously received. As far as the consumers are concerned, the transfer from municipal to private control seems to be quite satisfactory.

POLICE DEPARTMENT NOTES.

—The new republican administration at Knoxville, Tenn., discharged Chief of Police Atkins and his entire force, and filled their places with republicans. The new chief is C. A. Reeder.

—Hadley Clack, the well-known chief of police of Nashville, Tenn., has been retired by the new board of public works and affairs. Robert Sidebottom, a detective, has been elected chief of police.

—Early in March all of the 3,750 policemen in Chicago were discharged and 3,500 were immediately reinstated. Of the 250 policemen dropped from the roll some had bad records and others had to be discharged on account of lack of funds. The reinstements were made under civil service rules, and the men cannot now be removed for political cause.

—After nearly fourteen years of faithful, vigilant and intelligent service as chief of police of Albany, N. Y., Thomas Willard has been retired by the election of Capt. James L. Hyatt to succeed him. The best wish that Capt.

Hyatt's most earnest friends can have for him is that he will make as good a record in the office as has been made by his predecessor.

—Chief of Police Deitsch, of Cincinnati, has submitted his annual report, which shows that his department covers thirty-five square miles of territory. There are 350 patrolmen for this duty, which plainly indicates that the force is quite small for the work required. Chief Deitsch recommends bicycles instead of horses for the mounted policemen in the outlying districts. He estimates the population of Cincinnati at 400,000, and remarks that there are 100,000 persons living across the river who look to his department for protection.

—Detroit has 512 men in her police department; Buffalo, 775; Cleveland, 355; Milwaukee, 321. The salary of the superintendent of police in Detroit is \$4,000; in Buffalo, \$3,500; in Cleveland, \$2,300; in Milwaukee, \$3,600. In Buffalo the salary of a roundsman is \$400 higher than it is in Detroit, while the salaries of patrolmen are about the same in Detroit, Cleveland, Buffalo and Milwaukee. Detroit and Milwaukee do not pay salaries to their police commissioners, while Buffalo pays \$2,500 to hers and \$500 to the mayor, who is a member, ex-officio, of the police board, and Cleveland pays \$4,000 to her one police director.

—The police force of New York city, composed of 7,600 men, will change the style of their uniforms on June 1. The overcoats for officers will be blue, and have capes; they will have black mohair frog buttons with square cord loops eight inches long and rolling collars two and three-quarter inches wide. Knots of black mohair soutache braid on both sleeves will designate the rank of the wearers, as follows: Five braids, double knot, chief; five braids, single knot, deputy chiefs; four braids, single knot, inspectors; three braids, single knot, captains; two braids, single knot, sergeants. These ranks will be designated on the dress coats by a five-pointed star, a gold eagle, an oak leaf, double bars, and a single bar respectively, placed on each side of the standing collar, and in the case of captains and sergeants on each cuff also. The cuffs for the higher officers will be of black velvet edged with gold lace, the number and size of the rows of braid showing the rank. The trousers of all officers higher than roundsmen will have corded seams. For patrolmen, overcoats will be double-breasted, and dress coats single-breasted, both having collars without a seam at the back. Mounted policemen will wear short dress coats, trimmed with mohair braid, with standing collars and vertical openings over the hips. Bicycle police will wear double-breasted coats with rolling collars. Their trousers will be cut knickerbocker style, and seven-button gaiters of similar goods reaching to within two inches of the knee will be worn in summer. Leather gaiters will be worn in winter. The new buttons contain no lettering: simply a wreath of leaves surrounding the arms of the city.

—Chief of Police Murphy, of Jersey City, in his annual report, says that public gambling has been suppressed and a vigorous fight has been carried on against disreputable saloons. The chief refers particularly to saloons having private rooms with locks or bolts on the doors. "Many young girls are lured into these places," says the report, "and filled with liquor until their ruin is accomplished. These places are, in my judgment, the greatest curse that exists in our city. Many mothers can tell of their daughters being led astray from their visits to those vile places. There is no law against having a room or inclosure in a saloon, and I don't believe there should be such a law. Neither is it a violation of law for women to go into a saloon and drink there, but there should be a law enacted whereby all such rooms or inclosures should be so constructed that entire privacy could not be

ensured. We have about 1,100 saloons, most of which are conducted by honorable men, who would not permit any such conduct as I refer to. Realizing the existence of this fast-growing evil in our midst, I consulted with the captains recently and the result was that the captains visited all the saloons in their precincts where women and men visit private rooms, and told the proprietors they must remove the doors from their private rooms and substitute a half or swinging door. The captains report that their request was complied with in many cases." In regard to robberies the report says: "All of the after midnight robberies would have been prevented if people would spend a few dollars for bars to secure their lower windows. Nearly all of the ordinary burglars who enter dwellings at night are low-down fellows, too lazy to work. As they carry no tools but simply break a window and open the catch, and as they take but what they put on their back or in their pockets, they are hard to detect. The dangerous house thief of to-day is the man who operates in the afternoon while the ladies are out, and the second-story man who visits while the family is at dinner. This class of thieves are more intelligent than the night burglar; they get more for their work and run less chance of arrest."

FIRE DEPARTMENT NOTES.

—The expenses of the volunteer fire department of Middletown, N. Y., for the year 1897 amounted to \$4,153.68.

—Detroit has 417 fire department employes; Buffalo, 432; Cleveland, 378; Milwaukee, 336, Detroit, with fifteen fewer employes than Buffalo, pays out \$31,380 more than her sister city for salaries in the fire department.

—George A. St. John has been appointed to succeed George Stegmaier as chief engineer of the fire department at Wilkes Barre, Pa. Chief St. John has served for some time as first assistant chief and is a most competent fireman.

—James Devine has been reappointed chief engineer of the fire department of Salt Lake City. He has been at the head of the department for the past four years. For a term he was president of the International Association of Fire Engineers.

—President A. J. Kennedy has called a meeting of the board of directors of the International Association of Fire Engineers, to be held at Columbus, O., April 6. The object of the meeting is to set a date and arrange a program for the St. Louis convention.

—The piston type of steam fire engines is undoubtedly the more economical, effective and enduring machine of the two types of engines, piston or rotary, recently tested," is the substance of the report of the experts appointed by Director of Public Safety Riter, of Philadelphia, to determine which of the two types is the best for a big city like Philadelphia to have in its fire department.

—Fire-Chief Garverich, of Harrisburg, Pa., has sent his annual report to councils. He gives these statistics: Alarms of fire during 1897, 54; loss by fire during the year, \$11,870; insurance on same, \$5,091, leaving a total loss of \$6,779; number of fires of frame buildings, 20; number of fires of brick buildings, 30; false alarms, 2; calls out of city limits 1; fires confined to buildings in which they originated, 48; fires extending beyond buildings where they originated, 4.

—J. Elliot Smith, the superintendent of fire alarm telegraph of New York, against whom serious charges were made about a year ago, has been let out by Fire Commissioner Scannell, who abolished the office. The charges against Supt. Smith were investigated by the old board of fire commissioners, the majority of whom reported in favor of exonerating the superintendent. Com-

missioner La Grange, however, filed a minority report in which he contended that Smith had been proved incompetent. It is announced that Chief Bonner will assume charge of the telegraph bureau.

—John Jackson, chief engineer of the St. Paul fire department, has been given thirty days' notice to terminate his services with the city. The new board of fire commissioners took this action after being advised by the corporation attorney that the chief could be removed without charges in case thirty days' notice was given. Chief Jackson asked the commissioners if they had any charge to make against him and was answered in the negative. The high degree of efficiency displayed by the St. Paul fire department is the result of long years of faithful and intelligent effort on the part of Chief Jackson, and the discharge of such a competent fire fighter, for political cause only, reflects no credit upon the St. Paul fire commissioners.

—Chief Engineer John P. Quingley, of Syracuse, N. Y., has submitted his annual report, which shows that there were 257 fires during 1897, with a total loss of \$236,999.81. Chief Quingley says: "It is a well known fact that our department stands still while the city grows, and grows fast. If you stop to think, we have added but one hook and ladder to the department in twenty years, or since the organization of the department. In that length of time our city has more than doubled in population and valuation. Such a condition should not exist. Our fire department should be placed on a sound footing to enable us to cope with any fire. It is far better that our citizens pay a little more in taxes than to pay it out to insurance companies, who know how to protect their own interests."

—Mayor M. P. Snyder, of Los Angeles, Cal., in his annual message to the council, says: "While our fire department is one of the best on the coast, the board of fire commissioners see room for its improvement. They desire to place it on the highest possible plane of efficiency, at the very lowest cost to the city. The commissioners, the chief and other officers have labored hard in the interests of the service, and are deserving of much credit. It is the desire of the commissioners that all appointments to the service be made on merit, after competitive tests, open to all, of physical, moral and intellectual fitness. I believe that all positions, including the position of chief engineer, should be permanent, the holder of the same not to be subjected to removal even by the commissioners excepting for good and sufficient cause. The department should be above politics. It should be conducted on purely civil-service lines, which would lift it at once to an independence of action that would result in lasting good. The present commission has to some extent adopted civil service, and I trust that your honorable body will take such action as necessary to insure its permanency. A careful study should be made of the methods adopted in other cities."

—Thomas F. Barrett, chief engineer of the Indianapolis fire department, and John Rail, engineer of the Indianapolis Water Company, have invented an electric fire engine. Their attorney, A. M. Hood, explains the new invention as follows: "The boiler has been entirely discarded and the inefficient reciprocating pump has been thrown away. The new device consists primarily of an annular reservoir which is supported on suitable wheels and forms the main frame of the wagon upon which all the other parts may be mounted. This reservoir is empty when not in use, and is provided, at many points, with a number of plugs or nipples, to each of which may be attached a line of hose, it being possible to supply ten or more lines of hose. Each of the plugs is provided with a valve, so that any line of hose may be attached or detached at any time, even during the operation of the pump. Mounted upon the reservoir is a large rotary

pump, which discharges directly into the reservoir, and from there supplies all of the lines of hose which may be attached. Geared directly to this rotary pump is an electric motor, and mounted near the motor is a reel of wire which may be drawn off and attached to any suitable electric wires, such as trolley wires, electric light wires, or especially established stations which every large city will put up on the adoption of this new device. The wire reel is of such construction that any amount of the wire may be unwound without disturbing the connection with the motor, so that, no matter how near or how far the supply may be, there will be no delay in making connections with the motor. The rotary pump is arranged so that it may draw its supply from a cistern, a river, or directly from the water-plugs. The device is complete in every detail, provision being even made for the remote possibility of the bursting of the reservoir. In this case the openings into the reservoir from the pump are closed and lines of hose attached directly to the discharge pipes of the pump. The engine will only weigh 3,600 pounds."

WATER DEPARTMENT ITEMS.

—The council of Fargo, N. D., has approved of plans and specifications for a new 3,000,000-gallon pumping station, the present plant being inadequate to the increasing demands of the city.

—The waterworks commissioners of Cincinnati, Ohio, have recently completed an experimental filtration plant, where, under the direction of Chemist B. F. Fuller, the slow sand filtration system will be thoroughly tested.

—An injunction has been granted restraining the city of Bozeman, Mont., from buying a water plant of the Bozeman Waterworks Company, on the ground that the city could not, under the laws of Montana governing municipal corporations, assume the bonded indebtedness of the waterworks company, amounting to \$102,000.

—The water meter readers at Atlanta, Ga., have heretofore had the same districts and streets assigned to them from month to month, but now they are to be put in a new territory every month. This is intended to make certain that all of the meters are read regularly and carefully, and that no returns are made from previous readings. Many consumers at Atlanta have complained that the readers sometimes base their figures on the readings of the previous month.

—The Central States Waterworks Association was recently organized at Columbus, Ohio, with the following officers: President, Jeremiah O'Shaughnessey, Columbus, O.; vice-presidents, C. W. Wiles, De'aware, O.; J. P. Molloy, Sydney, O.; C. W. Koons, Mt. Vernon, O., and A. W. Inman, Massillon, O.; secretary, C. T. Rowe, Dayton, O.; treasurer, John Fisher, Hamilton, O. The association is to be confined to the states of Ohio, Indiana, Illinois, Michigan, Kentucky, West Virginia and Western Pennsylvania.

—Supt. Ward, of the water department of Buffalo, N. Y., reports that during the month of February 263,000,000 gallons less of water were pumped than during the corresponding month of last year. He says: "There is no doubt that the large decrease in waste of water is due in part to the addition of meters and mainly to the fact that the people of Buffalo are more careful, owing to the inspection for waste which is constantly being made by our bureau. The figures are significant as indicating what might be accomplished by the putting in of meters generally. About 800 meters are in use."

—Select council of Philadelphia, Pa., passed what is known as the Schuylkill Valley Water Company ordinance, but, after Mayor Warwick has promised to veto the measure, it was killed in common council. Under

the terms of this ordinance the Schuylkill Valley Water Company proposed to deliver to the city of Philadelphia, daily, 475,000,000 gallons of perfectly filtered water by means of the English slow sand filtration system; to store a sufficient body of water upon the Schuylkill to make a water famine an absolute impossibility; and to conduct the filtered water under pressure to the various pumping stations in the city for the sum of \$1,150,000 per annum.

—New water rates have been established by the city council of Chicago. The new ordinance equalizes the rates as much as possible, and its sections are so drawn that fraud by rebates and political pull will be impossible hereafter. The city comptroller alone is given authority to make rebates, after the blanks are filled out by the water assessor and countersigned by the commissioner of public works. Spring faucets are to be used in the future, but the ordinance does not compel the replacing of the present faucets. The meter rates provided by the ordinance are as follows: From 1,000 to 165,000 gallons per month, ten cents per one thousand gallons; from 165,000 to 5,000,000 gallons per month, eight cents per thousand gallons; over 5,000,000 gallons per month, four cents per thousand gallons.

—Judge Le Fevre, of the United States district court, has handed down a decision on the question of water rates to be charged by the Denver Union Water Company to private consumers of Denver, Col. This litigation has been pending for over four months, and the decision is a decided defeat for the city's contentions, as the rates fixed by the court are about 8 per cent. more than those formerly charged. The meter rates have been fixed as follows:

| Gallons per month. | Per 1,000 gallons. |
|-------------------------|--------------------|
| 1,000 to 15,000..... | 17 cents. |
| 15,000 to 30,000..... | 16 cents. |
| 30,000 to 60,000..... | 15 cents. |
| 60,000 to 150,000..... | 14 cents. |
| 150,000 to 315,000..... | 12 cents. |
| 315,000 to 637,500..... | 11 cents. |
| 637,500 or over..... | 10 cents. |

The minimum meter rate for business premises is fixed at \$3 per month, and for residences 25 cents per month.

—Councilman Edward Little, of Indianapolis, has prepared the following statement of water rates charged in Indianapolis and other cities, for the purpose of influencing action on his ordinance reducing water rates:

Indianapolis—Dwellings, six rooms or less, \$6 per annum; each additional room, \$1; stable for private family, two horses or less, \$5; bath tub in private family, \$3; water closet, \$3; hose use in connection with family use for lot thirty feet and under, \$6, and 10 cents for each additional foot.

Evansville—Dwellings, six rooms or less, \$5; stable for private family, including washing of carriage, \$2.50; bath tub in private residence, \$4; hose used for a lot twenty-five feet, free where family uses water in house, otherwise \$4.50 per annum.

Terre Haute—Dwellings, six rooms or less, \$5; private stable, \$3.50; private bath tub, \$3; private water closet, \$3; hose for lot of thirty feet front, \$5.

Anderson—Dwellings, five rooms, \$4; each additional tap, 50 cents; private stable, including washing vehicles, \$2; private bath tub, \$2; water closet, \$1.50; hose use for lineal front foot, 5 cents.

Ft. Wayne—Dwellings, five rooms or less, \$4; each additional room occupied by same family, 40 cents; stable, including washing of vehicles, \$2; private bath tub, \$3.20; water closet, \$3.20; hose used for lot fifty feet front or less, \$2.40; where water is used in house no charge for first 1,000 square feet.

Louisville, Ky.—Dwellings, six rooms, \$4.80; each additional room, 40 cents; private stable, one horse, \$1; private bath tub, \$2; private closet, \$2.40; hose used for lot twenty-five feet front, \$4.

Springfield, O.—Dwellings, six rooms or less, \$4; each additional room, 50 cents; private stable, including washing of vehicles, \$2; private bath tub, \$2.50; private water closet, \$2.50; hose used fifty feet front or less, \$4.

Cleveland, O.—Dwellings of one, two or three rooms, \$3; each additional room, 50 cents; private stable, \$2; private bath tub, \$2; water closet, \$2; hose used for sixty-six feet front or less, five-eighths connection free; three-fourths-inch connection, \$1; lot over 100 feet, \$1.50.

AN ELECTRIC RAILWAY STREET SPRINKLER

A new type of electric street sprinkler has lately been placed on the market by the Miller-Knoblock Company, of South Bend, Ind. The sprinkler is governed and run by motors of the same order as those used on trolley cars. The four sprinklers placed on each corner of the car are controlled by two rocking levers, one at each end, through which the force of the spray may be either increased or diminished as may be necessary for the width of the street. Independent motors on the ends of the car furnish the necessary power to force the water to the desired distance, and thus a street 100 feet wide can be thoroughly covered. Each sprinkler has a capacity of 2,500 gallons of water, which, by means of the force pumps, can be thrown to the full distance until entirely exhausted—a great advantage over the old way, that of

ASPHALT PAVING A FAILURE.

M. W. Manning, commissioner of public works of Peoria, Ill., in his annual report, says:

"Asphalt, as a paving material, has grown into disfavor in Peoria. If the pavements laid on our streets during the years of 1892 and 1893 are to be taken as any criterion of what we may expect in the future, the asphalt pavement, as a durable and satisfactory method of street improvement, is both expensive and inadequate. The durability of this kind of pavement is from about three to five years, and at the expiration of that time from date of construction the system begins to crack and show signs of decay. Various reasons are ascribed for this condition. Rapid expansion and contraction, caused by sudden changes in temperature, has a tendency to weaken the tensile strength and cause the pavement to fill with



THE MILLER PATENT ELECTRIC WIDE SPRAY SPRINKLING CAR.

making use of the force of gravity. The pump consists of two cylinders, the inner one made of gun metal, and the outer, on which a great pressure is brought to bear, is a highly tempered steel casing. Within the cylinders are four independent rollers which, through their rotary motion, force the water from the perforations. Two separate sprinklers of the ordinary kind are placed below the front and rear of the car for watering the space between the tracks. These are controlled by lock stops separate from those of the side sprays.

City officials and friends of CITY GOVERNMENT visiting New York are cordially invited to make the office of CITY GOVERNMENT their headquarters during their stay in the city. Desks, stenographers and stationery are placed at their disposal, and mail may be addressed in our care.

cracks, and the edges of these cracks rapidly chip off and the fissures enlarge. It is also stated that the asphalt covering does not knit firmly to the concrete base, so that in the course of a year or less the asphaltum becomes detached, and, with but two and one-half inches of substance subject to ordinary usage and climatic influences, will crack, roll and finally disintegrate.

"Barker avenue, from Moss avenue to Western avenue, and High street, from Elizabeth street to Main street, were constructed in 1892, by the Warren-Scharf Asphalt Paving Company, the guaranty of this company ending the latter part of 1897; both of these drives are in a deplorable condition. High street is a succession of breaks, rolls and depressions from end to end. To all appearance, at present, this street will have to be resurfaced its entire length this summer. Perry avenue, paved in 1894

by the Fruin-Bambrick Construction Company, was considered a solid, well paved street up to October, 1897, when it began to form rolls, which is but the beginning of the end in an asphalt pavement.

"The material that gives the best satisfaction for wear and solidity is brick, if the material selected is sufficiently perfect and properly constructed. The brick that gives the best results is the small commercial, which can be thoroughly burned and vitrified so as to resist all changes of temperature and withstand crumbling from heavy hauling. This quality of brick laid on a six-inch concrete foundation with two inches of sand cushion immediately under the brick will make a pavement which will, in the opinion of this department, greatly outlast the very best of asphalt pavements, while the cost of construction complete is 20 to 30 per cent. cheaper than asphalt."

AN IMPORTANT INVENTION.

A new invention has been put on the market which will do much towards increasing the efficiency of the fireman and making his calling less hazardous. The device is the "Midget" smoke protector, manufactured by A. W. Dolfini & Co., of New York, and is pronounced the best thing of its kind that has ever been introduced. At a



recent test given at the Brooklyn Navy Yard, in the presence of Commander Miller and other members of the Board of Docks and Yards, a man wearing a respirator entered a wooden shed, which had been built for the occasion, and which was filled with rags, paper, tar and kerosene so as to produce a dense smoke, and stayed inside twenty minutes. One of the members of the board tried to enter, but was driven back by the smoke. When the wearer of the respirator came out, he was examined by a physician, who found him suffering no ill effects, and in a perfectly normal condition. The construction of this smoke protector is very ingenious, consisting of a shield made of fine wire, cloth and rubber. The wire screen is strapped across the mouth and the rubber fits closely over the nose. All air taken into the lungs must come through a damp sponge, which acts as a filter, and which is fastened on the outside of the screen. When air is exhaled, it passes upwards and opens the rubber appliance which fits over the nose, but which closes as soon as process of exhalation is finished. There are also goggles, made especially for the purpose, which fit tightly over the

eyes, thus preventing smoke from entering them. The following paragraph from the report of the New York fire department for the year ending December 31, 1896, page 43, plainly shows how necessary a device of this kind is to the average fireman: "The majority of fires are stopped at their very beginning by the skill, coolness and courage of the officers and men in getting quickly, through smoke and flame, at the seat of the fire. In sub-cellars and basements, overhanging ceilings, in lofts and under stairways fires break out which can only be subdued by promptly getting at the point of starting. To do this the firemen must, in many cases, crawl and feel their way through blinding and suffocating smoke and almost unendurable heat. Succeeding by dint of these efforts in extinguishing the fires and thus preventing heavy loss of property, such fires are quite naturally dismissed with the words, 'damaged trifling,' 'slight,' etc., when in reality the service may have been far more hazardous than some of the conspicuous acts performed at large fires, in full view of spectators." The price of the "Midget" protector is \$3.50, complete with goggles.

CLAIMS FOR "KILFYRE."

(OPEN LETTER.)

The Monarch Fire Appliance Company, manufacturers of "Kilfyre," the "monarch" dry powder compound fire extinguisher (all chemical, no water—no acid), make the following claims for their products:

First—Efficiency, in that it will instantly extinguish any ordinary flame arising from any cause whatever; it will extinguish flames which no other extinguisher can put out or reach, without breaking, cutting, or having mechanical aid of any kind, and it will instantly extinguish flames which no other extinguisher can subdue at all.

Second—Quickness of action, because it is almost instantaneous, putting out all ordinary fires in less than three seconds, one-tenth the time required by the best liquid chemical extinguisher under the most favorable conditions.

Third—Simplicity, in that it requires no mechanical aid of any kind in its application. It can be thrown from the tube a distance sufficient to reach any fire, and in addition, the powder is so light that the draft created by the fire itself assists in drawing the powder where it is needed. It can be handled with equal ease and effectiveness by adult or child, as no special knowledge is required for its handling.

Fourth—Harmlessness; being non-poisonous, non-corrosive, it works no injury whatever to either person or fabric, no matter how delicate or fine the texture or coloring. Its gases are absolutely harmless to human life.

Fifth—Durability, in that it never deteriorates, either with age or climatic changes. Exposure to the atmosphere does not affect it, and it can hang in any place, dry or damp, warm or cold, without loss of strength or efficiency. Hence it can be absolutely depended upon at all times and in any place.

Sixth—Cheapness, its retail price being only \$3 and the quantity price even less. It is guaranteed to put out as much flame as any liquid chemical extinguisher costing ten times as much.

Finally, the general claim is made that "Kilfyre" will put out any blaze from any material in quicker time, at lower cost, with less injury, and with greater ease and efficiency than any other chemical fire extinguisher. This is why it is unqualifiedly endorsed by the representative insurance journals and its patrons everywhere. They challenge refutation.

NEW YORK'S NEW FIRE BOAT.

New York's new and finest fire boat made her trial trip from the yard of the builders, John H. Dialogue & Son, at Camden, N. J., on March 10. The run was made from Camden to Wilmington, twenty-eight miles, at a twelve-knot gait. The test showed 3,416 gallons per pump a minute, or 416 gallons more than the contract calls for. When the boat was launched several months ago she was christened the W. L. Strong, but the name has been changed to the Robert A. Van Wyck.

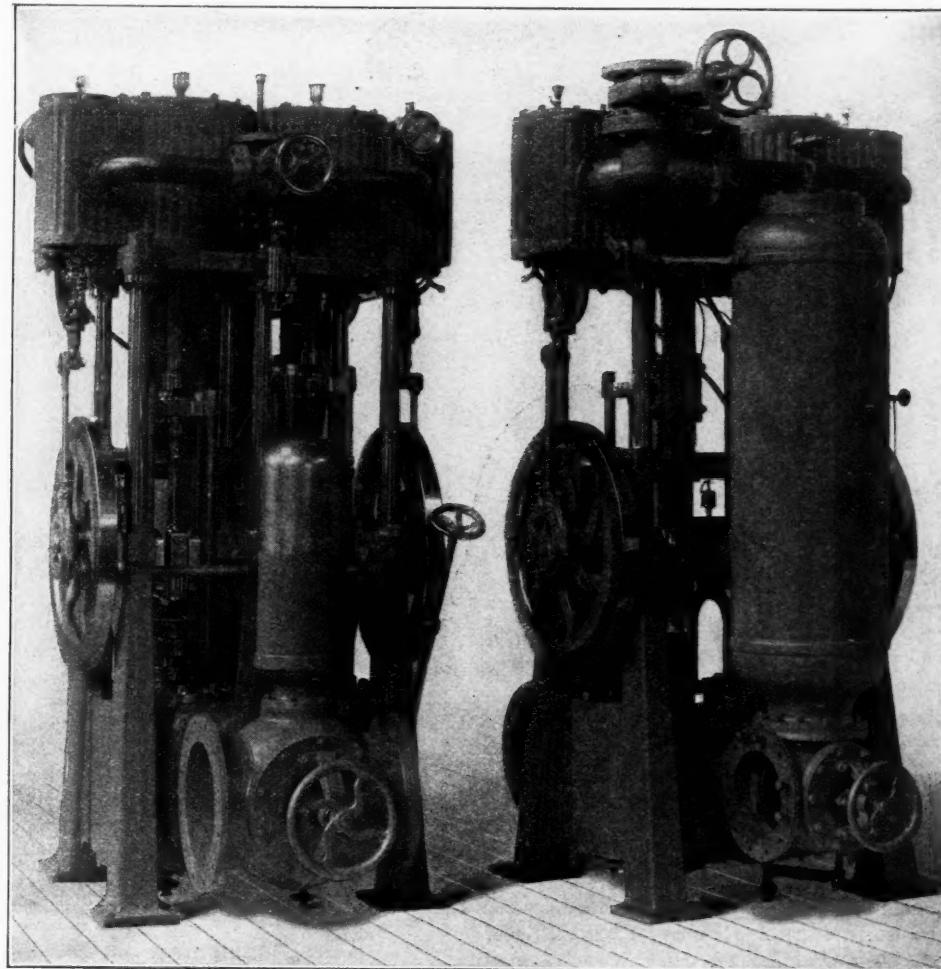
The boat was designed by H. deB. Parsons, of 22 William street, New York. She measures 110 feet over all, 102 feet at the water line, twenty feet beam and nine feet draught when coaled. She is constructed entirely of steel, and is so built as to withstand heat and any misdirected stream of water which might be played upon her, her water towers being operated from below, and the engine room and cabins being lighted with heavy glass deadlights instead of the ordinary windows. She will have a speed of twelve miles an hour, her motive power being a compound engine of 425 horse power, driving a seven-foot propeller.

The fire pumps of the Robert A. Van Wyck are giant affairs in size and capacity and furnish one of the most interesting features of its equipment. They were built by the American Fire Engine Company, of Seneca Falls, N. Y., and may be described as simple duplex-acting direct-connected pumps of the Clapp & Jones type, with crank and fly-wheel attachment. There are two complete pumps, weighing about thirteen tons and with a guaranteed capacity of 6,000 gallons of water per minute against a working pressure of 170 pounds to the square inch. The steam cylinders are made of hard cast iron and fitted with piston valves. They are seventeen inches in diameter by eleven inches stroke. The water cylinders, like the greater part of the pumps, are of composition metal, ten inches diameter by eleven inches stroke. A good idea of the power of these pumps may be gained from the fact that they will be able to force one four-inch nozzle stream 400 feet or four two-inch streams 250 feet, or fifteen one and one-quarter-inch streams 200 feet.

The engraving herewith shows the set of pumps, arranged so as to present a front and rear view, as they appeared ready to be put aboard the boat, and will no doubt be studied with interest by fire engineers and others. The simplicity and beauty of design and compact construction is strikingly shown. This type of fire pump is considered by those competent to express an opinion upon such matters, the best on the market for marine fire service, and the builders have already furnished a number of them for fire boats stationed in New York harbor and at Boston, Chicago, Brooklyn, Philadelphia and other cities.

The Robert A. Van Wyck will be stationed in the East river, probably either replacing the William F. Havemeyer at the foot of Grand street, in which case the Havemeyer will be stationed further up the East River, or in the Harlem River, or else the new boat will take the upper station, which will be near the important shipping and bridges of the lower Harlem River, the entrance to the Sound and the city institutions on the islands about Hell Gate. There have been three serious fires on Ward's Island alone since the fire boat service was instituted, and it was with the idea of stationing a fire boat in this vicinity that the appropriation for a new boat was asked for in last year's budget of the fire department. This appropriation was \$56,000.

The finishing touches are now being put on the Van Wyck, and she will be brought to New York and



FIRE PUMPS OF THE ROBERT A. VAN WYCK.

put into service within a few weeks. A number of fire department officials from New York, Philadelphia, Baltimore and other cities were aboard the boat when she was given her trial trip, and after she comes to New York she will doubtless be examined by many visiting firemen.

—Avalon, Pa., has purchased Seagrave trussed ladders for its fire department from Gleason & Bailey.

—Chief Bonner, of New York, on September 28, ordered six of the Vajen-Bader patent head protectors. The first month's experience with the helmets was so satisfactory that on November 8 an order was placed for six more helmets, and on December 22, the third order from Chief Hugh Bonner for six more head protectors was given, making eighteen helmets in all ordered within a period of ninety days.

ELECTRIC STREET LIGHT FIXTURES.

The two cuts shown here illustrate two very useful electric street light fixtures made by the Wheeler Reflector Co., of Boston. Fig. 1 shows a silver plated mirror reflector which increases the light six to eight times up and down the street without decreasing it in

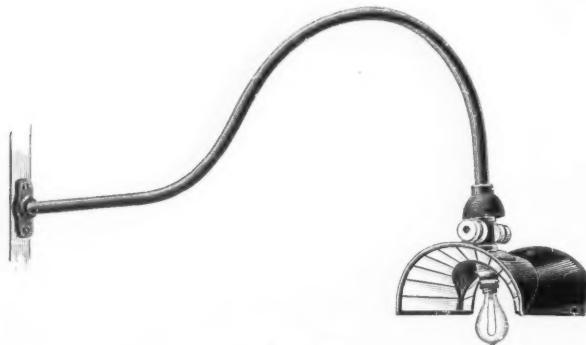


FIG. I.

the least in other directions. Therefore it may be used on street corners as well as elsewhere, the reflector being set to operate up and down the principal street. This device is a very great improvement over ordinary deflectors, serving from its peculiar construction to throw the light to long distances and thus cut out the dark spaces



FIG. II.

ordinarily found between lamps. Fig. 2 shows another style of street light fixture which has many advantages. It is constructed especially to distribute the light evenly and to a long distance. Officials interested in securing efficient and economical street lighting will find it to their advantage to examine the Wheeler fixtures.

HERE'S ANOTHER STRAW.

Galion, O., Feb. 19, 1898.

CITY GOVERNMENT PUB. CO., NEW YORK.

GENTLEMEN:—Some time ago you made our city a proposition that you would furnish us your paper at \$1.50 per year, providing we would subscribe for twelve copies per month. As you are aware we agreed to take two copies at \$5 per year. Your paper has so impressed its value upon each member of our council, and others as well, that the council has instructed me to order twelve copies per month, providing you will let us have them at the rate you formerly offered us. If you will accept this proposition, mail me twelve copies per month, commencing with January, that is, send the ten additional copies for January and this month. Very truly yours,

C. H. BRIGGS, MAYOR.

DIRECTORY OF MUNICIPAL ORGANIZATIONS.**League of American Municipalities.**

President—John Mac Vicar, Mayor, Des Moines, Ia.
Vice-President—Charles A. Collier, Mayor, Atlanta, Ga.
Treasurer—Samuel L. Black, Mayor, Columbus, O.
Secretary—B. F. Gilkison, Downing Bldg., New York City.
Trustees—John Warner, Mayor, Peoria, Ill.
F. A. Walker, Council, Trenton, N. J.
C. M. Leitch, Council, Wilmington, Del.
Next Convention—Detroit, Mich., Aug. 1 to 4, 1898.

International Association of Fire Engineers.

President—A. J. Kennedy, New Haven, Conn.
Secretary—H. A. Hills, Wyoming, Ohio.
Treasurer—D. C. Larkin, Dayton, Ohio.
Next Convention—St. Louis, Mo.

American Water Works Association.

President—John Caulfield, St. Paul, Minn.
Vice-Presidents—Joseph A. Bond, Wilmington, Del.
Charles P. Allen, Denver, Col.
John B. Beim, Madison, Wis.
R. L. Clayton, Atlanta, Ga.
Edmund Mather, Harrisburg, Pa.
Secretary-Treasurer—Peter Milne, Brooklyn, N. Y., care Municipal Bldg.
Next Convention—Buffalo, N. Y.

National Association of Chiefs of Police.

President—J. T. Janssen, Milwaukee, Wis.
Vice-President—W. G. Moore, Washington, D. C.
Secretary—Harry O. Carr.
Next Convention—Milwaukee, Wis., June 7-9, 1898.

American Society of Municipal Improvements.

President—Harrison Van Duyne, Newark, N. J.
Vice-Presidents—L. W. Rundlett, St. Paul, Minn.
E. H. Keating, Toronto, Can.
A. D. Thompson, Peoria, Ill.
Secretary—D. L. Fulton, Allegheny, Pa.
Treasurer—John L. Kennedy, Nashville, Tenn.
Next Convention—Washington, D. C., Oct. 12-14, 1898.

American Public Health Association.

President—Dr. Charles A. Linsley, New Haven, Conn.
Vice-Presidents—Dr. Benjamin Lee, Philadelphia, Pa.
Dr. J. C. Schrader, Iowa City, Ia.
Secretary—Dr. H. C. Probst, Columbus, O.
Treasurer—Dr. H. C. Bolton, Brattleboro, Vt.
Next Convention—Ottawa, Canada, Sept., 1898.

National Street Lighting Association.

President—D. Hunter, Jr., Allegheny, Pa.
Treasurer—C. E. Thompson, Binghamton, N. Y.
Secretary—Charles E. Burton, New Haven, Conn.
Asst. Secretary—C. F. Roberts, New Haven, Conn.
Next Convention—Binghamton, N. Y.

Association of Fire and Police Telegraph Superintendents and Municipal Electricians.

President—Will G. Ellett, Elmira, N. Y.
Vice-President—William Brophy, Boston, Mass.
Corresponding Secretary—H. F. Blackwell, New York.
Financial Secretary—Burt McAllister, Bradford, Pa.
Treasurer—Adam Bosch, Newark, N. J.
Chairman Executive Committee—F. C. Mason, New York.
Next Convention—Elmira, N. Y., Aug. 9, 1898.

National Firemen's Association of the United States.

President—F. A. Wood, Cedar Rapids, Ia.
Secretary—E. W. Barkman, Decatur, Ill.
Treasurer—H. S. Salisbury, Whitewater, Wis.
Next Convention—Chicago, Ill.

THE AUSTIN ROAD MACHINE.

The illustration on this page shows the use of Austin road machines for cleaning snow from the streets around the City Hall in Chicago. The city of Chicago owns ten Austin road machines, and, as they are furnished with spring-tooth blades, they are used not only for cleaning snow, but also for scraping mud and slush from the pavements, without tearing up bricks, blocks, or tracks, or injuring the machines in any manner. The Austin road machine is so well known that it is scarcely necessary to dwell upon its merits here. It is constructed principally of steel, great strength being secured by special shapes rolled exclusively for its use. It has a direct

blade two feet further still and raise or lower either end of it. The blade being drawn from the front axle, instead of being pushed from the rear axle, the machine does not require spuds for the rear wheels, as it will not slide sideways away from the work. Owing to the great adjustability of the blade and the long rear axle, the machine will cut a ditch six feet wide on top by two and one-half feet deep.

TENURE OF OFFICE FOR POLICE.

At Danville, Va., the members of the police force are elected by the city council for terms of only six months' duration. This method of keeping a policeman on pins



AUSTIN ROAD MACHINES CLEANING SNOW AROUND CITY HALL AT CHICAGO.

draft, pulling the blade instead of pushing it, and it does its own plowing in any kind of ground, being as well adapted to the flint hills of the East as to the prairies of the West. The blade can be set at any angle, from a line parallel with the pole to 179 degrees, and it can be shifted thirty inches outside of the wheels and still retain a plowing angle. The draw-bar is of double goose-neck pattern with swivel nose-iron, giving strength and steadiness and a free adjustment of the blade without lost motion or cramping. The machine has a long rear axle with a combined pivotal and lateral adjustment. The operator, from the platform, can reverse the blade end for end; by means of the lateral rear axle, he can shift the frame of the machine with the blade five feet on either side, and by shifting the lever, he can shift the

and needles all the while has not induced any marked degree of efficiency in the force, and there is a desire on the part of the city council to make a change. Robert Brydon, clerk of the council, applied to the League of American Municipalities for information regarding the appointment and tenure of office of policemen, and was given the following reply, which is of general interest:

In regard to your inquiry of February 18 we have consulted Benj. Murphy, chief of police of Jersey City, and one of the best authorities on police matters in this country. Chief Murphy has been in the police service for twenty-five years, is a member of the National Association of Chiefs of Police, and has attended nearly all of its conventions, where the questions contained in your inquiry have been thoroughly discussed. He says your system of electing policemen every six months is the worst he ever heard of; that under such a system the police force

could not possibly attain any degree of efficiency. Chief Murphy is a strong believer in life tenure of office for policemen, and is the author of the "Life Tenure Act," under which all the police departments in New Jersey are governed. This law was adopted, in 1885, and after repeated tests, has been upheld by the supreme court of the state. Under this law a policeman is appointed for an indefinite term and cannot be removed unless he violates some rule of the department. Upon violation of a rule, formal charges must be made against the policeman and he must be given a trial before the governing board, which in some cities is the board of police commissioners and in others the council police committee. If the charges are proved the board must remove the policeman from office, and such removal is final. Of course, there are provisions under which the board can remove policemen for mental or physical disability. In the first place, policemen are appointed by the board of police commissioners or the council committee. Life tenure of office, with removal only on charges or in case of disability, makes policemen secure in their positions and removes them from all political influences.

The best authorities in the country agree that the longer a policeman serves the better he is enabled to perform his duties. Thorough knowledge of every nook and corner in a city, of all its people and of its wrong doers and the criminal class in particular, is necessary to efficient police service. Such knowledge, of course, is best gained by experience on the police force.

In New York state, Massachusetts, Connecticut, Michigan and New Jersey, police are appointed by police commissioners, excepting in some of the smaller cities, where the appointments are made by council committees on police. The police commissioners, composed of three, four or five members, are appointed by the mayor and are generally non-partisan.

In Nebraska, Missouri, Colorado and Kansas the police commissions of the various cities are appointed by the governor of the state; but this system is never satisfactory to local interests, as it is a violation of the principle of home rule.

In Minnesota, Illinois, Iowa and other Western states there are no police commissions and the police departments are under the direct control of the mayors, who appoint the policemen.

In nearly all of the states, however, there are laws making policemen secure in their positions during good behavior, and they cannot be removed except on charges or on account of

mental or physical disability. In many states, notably in New York and Illinois, candidates for positions on the police force must pass a civil service examination. As to rules and regulations for police departments we send to you, under separate cover, the manual of the Jersey City department, which is probably the best book of its kind published.

NEW ORLEANS' NOVEL EXPERIMENT.

New Orleans is proposing to undertake a rather novel experiment in the administration of its local affairs. For some time the people of that town have been hampered by a number of inequalities and irregularities in their municipal government. It is to remedy these that they have brought before the constitutional convention now in session the plan to alter the framework of their local laws. The proposed improvements are various and comprehensive, but the project now under discussion comprehends nothing less than the appointment of a body of 100 citizens to be known as the board of public works. It is not intended that these citizens shall participate in performing the usual duties of the regular city officers or the council, but it is proposed that when public improvements are to be made the city, instead of bargaining with private contractors or undertaking the work on its own account, shall act on the instance of the board, which will see that all the necessary work shall be done at such a price only as will pay actual cost for construction and maintenance. In this way the board will dictate as to the operation of all plans for sewerage, main drainage, public lighting, water supply, the paving of the streets and similar matters.

The measure which the New Orleans Municipal Improvement Association has prepared for this purpose is sweeping and comprehensive. It not only provides for

ATLAS

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EXTENSIVELY
FOR
STREET PAVING,
SEWERS,
RESERVOIRS,
BRIDGE WORK,
PUBLIC BUILDINGS
AND ALL KINDS OF
PUBLIC WORK.

**IT IS THE
STANDARD.**

PORTLAND



CEMENT.



ATLAS CEMENT COMPANY,

143 Liberty Street, New York.

the establishment of the board of 100 citizens, but actually names the citizens who are to be chosen as the members of the first board. It provides that twenty of these shall hold office for twenty years, twenty for sixteen years, twenty for twelve years, twenty for eight years and twenty for four years. After the expiration of the four years all members shall be elected by popular vote, their term being twenty years.

At first glance the plan seems cumbersome and extravagant, but certainly it might do much toward securing an absolutely economical and business-like administration of the city's municipal affairs. It would be non-partisan and its policy would be exempt from the fluctuations of political contests. Whether as a fact it is not too rigid and inelastic to suit the needs of democratic government is a question which New Orleans must settle for itself. But the fact that there is an apparent need for some such sweeping action is a deplorable commentary on the incompetence of municipal government in Louisiana as elsewhere in the United States.

TRADE NOTES.

—D. V. Purington has been elected president of the Cook County Paving Brick Company, Chicago, Ill.

—The Gleason & Bailey Manufacturing Company, of New York, has received an order for a handsome hose wagon from Morrisville, N. Y.

—The Pittsburg Vitrified Paving Brick Company, Pittsburg, Kan., is enlarging its plant by constructing three kilns and a new drying house.

EDMUND B. WESTON,
Consulting and Civil Engineer, M. Am. Soc. C. E.,
M. Inst. C. E., 86 Weybosset Street,
Providence, R. I.

Asst. City Engineer in Charge of the Providence (R. I.) Water Department from 1878 to 1897. Specialties: Water Supply, "Natural Filtration," "Mechanical Filtration," Fire Protection, Sewerage, Municipal Work, Expert Testing of Pumping Engines, etc.

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This company makes a specialty of "Municipal Engineering," estimates of cost of plant, cost of operation, plans, specifications, supervision and final tests upon Electric Lighting and Water Works Plants.

References by permission:
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Hon. John MacVicar, Mayor, Des Moines, Iowa.
Hon. Edward W. Brown, Mayor, Rockford, Ill.
Hon. W. G. Mellinger, Mayor, Cumberland, Md.

Also to the Mayors of the following cities:
Madison, Wisconsin; Sycamore, Woodstock, Illinois; London, Bryan, Columbiana, Ohio; Lansing, Hillsdale, Negaunee, Evert, West Bay City, Michigan; Springville, New York, etc.

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Electric Light, or Gas Plant designed, built or remodeled, estimates will be gladly submitted.

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Take advantage of our experience in remodeling old plants and making them up-to-date.

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WE REFER TO THE LARGE NUMBER OF PLANTS WE HAVE INSTALLED AND REMODELED.

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THE NEW ENGLAND ENGINEERING CO., WATERBURY, CONN.

—The Western Electric Company manufactures a very superior disk Le Clanche porous cup cell, especially adapted for bell and annunciator work. They make the batteries complete or furnish the porous cup without zinc or glass jar.

—The North Alton Paving and Fire Brick Company, Alton, Ill., has elected officers as follows: President, Edward Rogers; secretary and treasurer, Eben Rodgers; directors, W. E. Smith, Ba'sar Schiers, E. C. Lemon and H. P. Rodgers.

—The R. G. Marcy Manufacturing Company, Bluffton, Ind., has been incorporated to manufacture pumps, water works machinery, etc., by G. A. Ullman, Ashland, and R. G. Marcy, J. W. Sharick, J. A. Ullman and L. H. Marcy, Bluffton.

—In order to introduce their improved pumps, neck pieces, air valves and flat and ball rubber valves, John Maslin & Son, of Jersey City, are presenting free to all users of Pulsometer and other pumps of this class, a very valuable attachment. All that is necessary to secure the attachment is to send the number and size of pump.

—Rescue Hook and Ladder Company, of Bethlehem, Pa., has awarded the contract for hats, caps and belts to the Cairns Brothers, of New York. The hat is a new style. It is white with onyx and silver trimmings. The belts are of tan color with onyx trimmings, and the cap is blue, to match the uniform, with onyx trimmings.

—The cities of Waltham and Beverly, Mass., have recently renewed contracts with the Wheeler Reflector Company, of Boston, for street lighting, using the popular Wheeler reflector and oil-lamp system, as they have done for the past fifteen years. Haverhill, Mass., where

the Wheeler system has been used five or six years, has also renewed the contract.

—T. McIlroy, Jr., representative of the New York Belting and Packing Company, limited, has just returned from a tour of the country, having visited the agents of the company in the different cities. He reports the business outlook for 1898 considerably improved. While in Omaha, Neb., he closed a contract with the Trans-Mississippi Exposition managers for fifteen thousand feet of fire hose.

—The removal of the old Chicago post office building furnishes to the Union Akron Cement Company, of Buffalo, a testimonial of rare value. When the post office was built in 1872 Akron cement was used for the foundation and the wrecking company who had the contract for tearing away the old building encountered a very difficult task in removing the foundation, which work had to be done by the aid of steam drills and dynamite.

—The board of fire commissioners of New Haven, Conn., have placed a contract with S. F. Hayward & Co. for two Champion-Babcock combination chemical engines and hose wagons, with the patent steel wagon bodies. These wagons will carry a sixty-gallon chemical cylinder, two pony Babcock fire extinguishers, and extension ladder, two pike poles, and the usual complete equipment which accompanies this kind of apparatus. The wagons will be delivered early in May.

—The C. A. Brockett Cement Company, Kansas City, Mo., and the Kansas City and Fort Scott Cement Company have been consolidated, the new corporation bearing the firm name of the Fort Scott Cement Association. The mills are located at Fort Scott and the general offices

THOMSON METER CO., 79-83 Washington Street, BROOKLYN, N. Y.

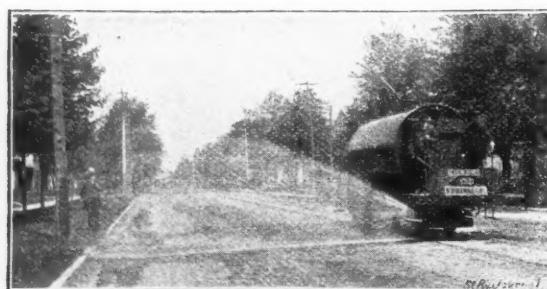
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ON MARCH 31, 1894, THIS COMPANY STAMPED METER No. 50,000.

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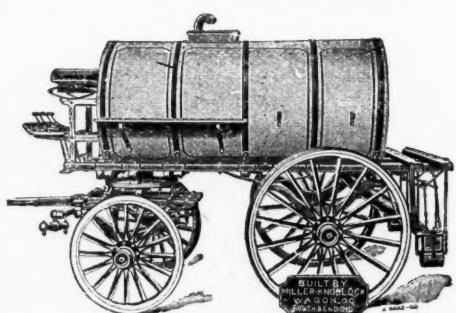


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VENTILATED ALUMINUM

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*Lightest,
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and only Metal Fire Hat
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Ventilation keeps head
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*No Leakage.
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This Hat is
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A FIRE
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THAT KILLS
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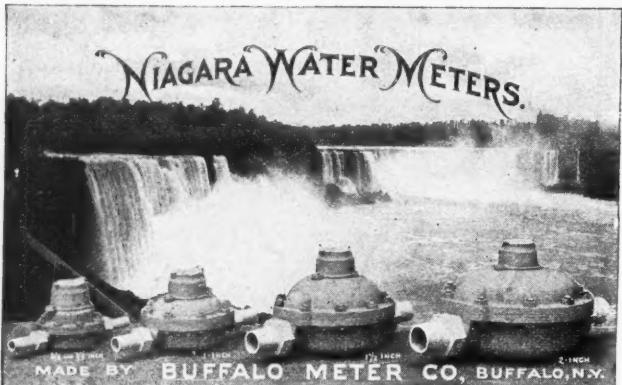
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CAST IRON PIPE
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Supplied ready for use.
For Warehouses, Breweries, School
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Unaffected by liquids of any kind.
Does not disintegrate.

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For Stone, Wooden or Brick Pavement.
Does not crack or run nor disintegrate.
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Acid proof, Anti-Rust, Etc.

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